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ORIGINAL ARTICLES.

SPEECH WITHOUT A LARYNX.[1]

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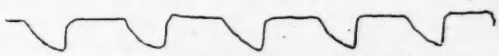
I HAVE the honor to report the following facts in the case of Daniel Hickey. This man talks after the removal of the larynx. The operation was performed for epithelioma by Dr. J. Solis-Cohen at the Jefferson College Hospital, April 1, 1892.[2] Dr. Cohen informs me that the parts removed included the entire larynx (excepting the free portion of the epiglottis). The first ring of the trachea was removed with the larynx, and the second was stitched to the skin of the front of the neck.[3]

The patient was mute after the operation for nearly a year, when speech returned. Inspection of the external part of the neck showed a T-shaped scar extending from the tracheal opening to near the position of the hyoid bone. The greater part of this region was occupied by a sac of irregular shape, measuring about 45 mm. in length by 26 mm. in width, whose anterior wall was the integument, and which could be easily pressed back against a resistant surface, which was doubtless that of the cervical vertebræ. The skin, which in part was occupied by scar-tissue, was perforated near the junction of the level of the old transverse and longitudinal incisions by a minute fistulous track. Bubbles of air and a little mucus escaped from this opening. Owing to the prominence of the bellies of the sterno-cleido-mastoidei muscles the sac was in a depression whose lateral boundaries were not fixed. The sac-wall apparently had no muscular power, and was exceedingly flaccid. It will be seen that it moved freely from slight forces exerted within the mouth and pharynx. Its size varied only with the amount of air or fluid it contained. The tracheal opening was red in color, and apt to be coated by scales of inspissated mucus. The position of three rings of the trachea could be made out by the unevenness of the tracheal surface rather than by any contrasted effects of colors. The trachea moved slightly (synchronously with the pulsations of the heart) from left to right.

Examination with a laryngeal mirror, placed as in the position usual for laryngoscopy, showed the base of the tongue and the epiglottis to be normal. The epiglottis was large, broad, and but slightly depressed in the center. It stood erect. A deep, funnel-shaped depression, answering to the interior of the sac, extended from the pharynx downward. No details could be detected within the sac other than a small scar-like structure at the posterior border of the aperture. This appeared to be most distinct at the time of a deep inspiration. I speak here of the *time* of the inspiration, and not of the assumed passage of air from the pharynx into the sac. When the nostrils were closed, the mouth open, the tongue protruded, and a film of mucus was stretched across (as was often the case) from the tongue to the velum palati, it was interesting to note that the film would persist for an indefinite period, thus proving that no air entered the sac during respiration. Forcible closure of the nostrils would often cause the film to bulge forward and break. I assume that the displacement of the air from the nose had slightly compressed that in the pharynx. The sac was seen to be easily closed by pressure from without, the two lips came together, and the whole space was obliterated. The fistulous track through the wall of the sac was valvular. A probe passed through it was easily discerned in the pharynx. The outer end of the fistula being covered with plaster, and the nostrils and mouth closed, the sac could be distended so as to become convex anteriorly. I assume this was caused by elevation of the base of the tongue and velum, and consequent displacement of the air of the mouth and pharynx downward.

FIG. 1.



Respiratory curves made by motions transmitted by the neck to level placed on sac.

The respiratory phenomena, although not subjected to precise experiment, appeared to be normal. The patient breathed from nineteen to twenty-two respirations per minute. The chest-expansions were free and unimpeded. A tambour being held in contact with a lever placed on the sac, and so arranged as to transmit impulses to a second tambour so disposed as to have its movements recorded on a kymographion, was found to make a downward

[1] A report of an investigation made at the instance of the College of Physicians of Philadelphia, and presented March 7, 1894.

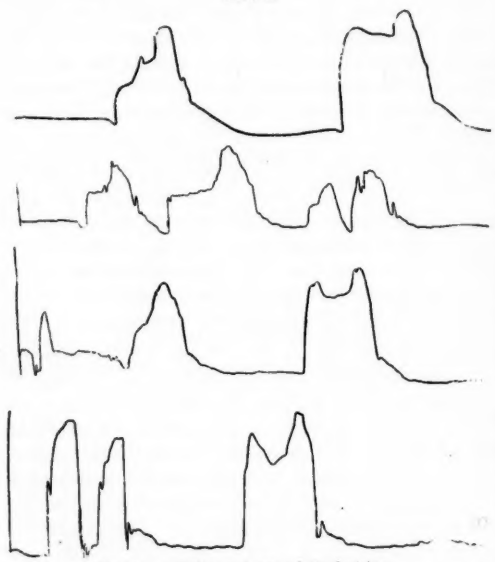
[2] See Trans. Phila. County Medical Society, vol. xiii, 1892, p. 302; also Trans. College of Physicians of Philadelphia, 3d Series, vol. xv, 1893, p. 131.

[3] A brief reference to the operation will be found in THE MEDICAL NEWS of July 23, 1892, p. 98: and a reference to the subsequent course of the case in THE NEWS of February 18, 1893, p. 195.

tracing during the act of respiration, while the form of the sac did not change in shape. I conclude that these movements were secondary. The changes here noted were due to the motions of the neck itself during the act of respiration, and were probably related to the elevation of the clavicles and the upper part of the thorax. (Fig. 1.)

The act of swallowing was performed with comparative ease, though food was apt to pass into the sac. Liquids flowed out readily from the fistula. Pressure on the sac with the finger prevented the passage of both solids and liquids, and this pressure was regularly employed by the man in eating and drinking. The tracing made on the kymographion varied exceedingly, and appeared to be due to inconstant use of the tongue and pharyngeal muscles. Some of the tracings of deglutition are herewith given. (Fig. 2.)

FIG. 2.



Tracings of the variants of deglutition.

The voice appeared to be true, as opposed to a whisper. It was thin, harsh, and weak, though estimated by Dr. Cohen to be heard at forty feet. Wheezy sounds of air escaping from the lung occurred coincidently with speech.

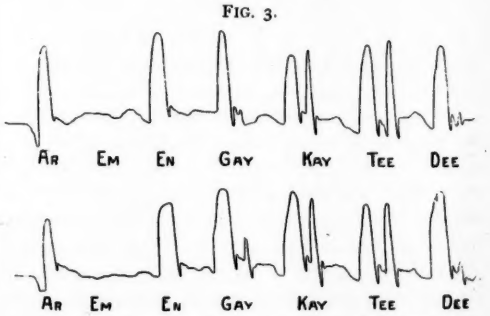
The voice was fairly well modified, and was capable of slight shades of expression. The patient could sing a song, and while the musical character of the performance was *nil*, the difference in tone between the attempt at singing and ordinary utterance was evident.

In studying the phenomena of speech the first experiments were directed to the tongue and velum. I repeated the observations of Dr. N. Kingsley to ascertain after what manner the tongue was used in articulation. I secured the assistance of Dr. W. Christensen, a dentist in this city, who kindly prepared a number of vulcanite plates. Coating one of these with a mixture of alcohol and prepared chalk, and placing it in the roof of the mouth, I directed the patient to pronounce the letters of the alphabet. The tongue wiped away the chalk and exposed the black color of the rubber beneath. It was easily ascertained that the contact of the tongue against the velum and palatal vault was made in a normal manner, the only difference between those thus obtained and those made in the mouth of Dr. Christensen himself being of a character that could be readily explained by individual peculiarity. The patient was rendered mute by the insertion of the plate, but by a little practice the voice returned. The slightest pressure of the plate against the velum immediately destroyed the power of utterance.

The voice was next recorded on a phonograph. This was done with the object in view not only of eliminating the tracheal noises, but of catching the shades of distinction of the voice that could not be detected by the unaided ear. I regret to say that these experiments were without results.

The third series of observations consisted in careful inspection of the sac during enunciation. The following facts were elicited: Just before speaking the patient inspired; then at the time of talking (the pronunciation of definite simple sounds was practised) the sac filled and emptied. The levers with tambours were here used, and their movements were recorded on a kymographion, as in the case of the respiratory movements. All of the speech-tracings were upward, and were thus quite unlike those of respiration. (Fig. 3.) Filling of the sac occurred

FIG. 3.



Tracings of consonants *r*, *m*, *n*, *g*, *k*, *t*, *d*—Continental pronunciation.

in all the consonants in which *e* (*i. e.*, the sound made in the English alphabet) entered. *G* (gay) produced, as was expected, a maximum amount of movement in the sac-wall. The least constant movement occurred in *m* (em). While engaged in repeating these sounds it occurred to me that it would be convenient to have a number of phonetic characters arranged in the order of their formation from the throat toward the teeth, and I accepted the following as fairly representative of such a series: *r*, *m*, *n*, *g*, *k*, *l*, *s*, *t*, *d*. All observations were made

with the patient reading aloud these letters from a chart placed in front of him, while the head was supported to eliminate all body-movements. It was soon noticed that the movements in *m* were the least constant, and the sac-movements were influenced by the act of respiration. If a full inspiration were taken, and *g* pronounced and *m* followed scarcely any motion ensued in the sac, while if, after a full inspiration, *m* was at once pronounced the sac-walls moved almost as freely as in the pronunciation of any other sound. At the same time it was evident that while neither the air of inspiration nor that of expiration was used, the patient could speak only during expiration. I recognized the subject to be complex. The difficulties in maintaining exact uniform contact of the lever against the sac were considerable, and had not been overcome at the time the experiments were interrupted. But this much can be said: that the movements of the sac-wall were freest in the formation of the sound when the base of the tongue is known to assume the largest size (*i. e.*, humping upward), and that they were limited in range or entirely absent when the base of the tongue was known to move upward the least in the manner described; therefore, that the times of enunciation and those of movements of the sac were synchronous, and that a direct connection existed between the movements of the sac and those of the tongue. In a word, the movements of the sac-wall were due to compression of air in the sac, due in its turn to displacement of air in the mouth and pharynx. (Fig. 4.)

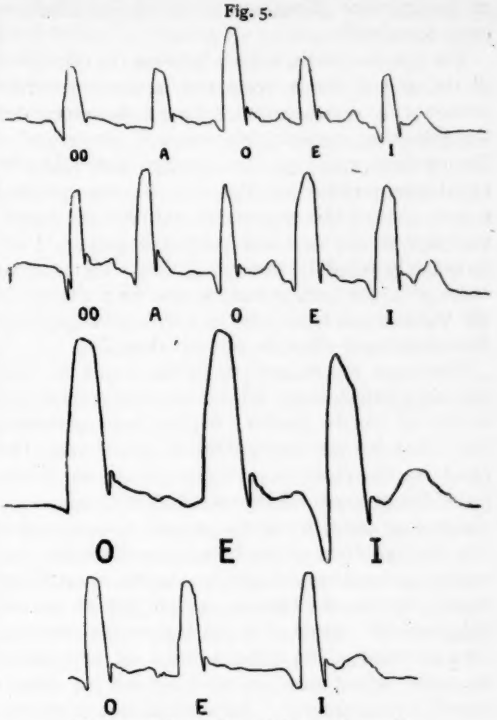
FIG. 4.

Tracings of the same consonants illustrated in Fig. 3. The crosses represent the times of expiration.

Enunciation of the vowels permits air to pass through the mouth through relatively wide apertures as compared with enunciation of the consonants. Among the vowel-tracings I secured, as a rule, a single curve. (Fig. 5.) The variations were sufficient to lead one to suspect that oscillation was a disturbing factor. Yet, when allowance is made for this error, the tracings are seen to be broadly contrasted with those of the consonants, and the semi-vowels *l* and *r* to be (as they should be) quite like the vowels themselves. (Figs. 6 and 7.)

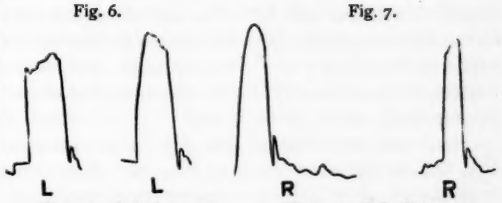
Enunciation of the consonants permits air to pass through the mouth with difficulty, if at all, and we find with them a disposition to form a double tracing, excepting in the case of *m* and *n*. The fact that *n* sometimes has a semi-vowel value probably accounts for its curve being at times like that

Fig. 5.



Variants of the tracings of the vowel sounds. Continental pronunciation.

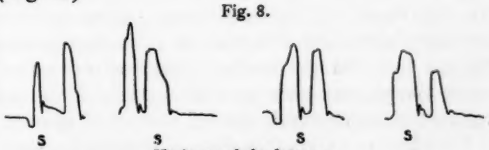
Fig. 6. Fig. 7.



Variants of the letter *l*. Variants of the letter *r*.

of a vowel. Further investigation will be demanded to settle this point. I thought I had secured a uniform, constant value for this letter, but I may have been mistaken. As a rule, it may be said that the greater the resistance to the outward flow of air the more striking become the sac-movements. As can be surmised, these were greater with surds than with sonants, and therefore were greater with *t* than with *d*, and were marked with the sibilant *s*. (Fig. 8.)

Fig. 8.



Variants of the letter *s*.

Stimulated by these observations, I was about to institute a carefully devised series of tracings based

on the tenets of phonology, when the investigation came to an end.

The relation which existed between the distention of the sac and the movement of respiration and in pronouncing *m* remains unexplained, as indeed did the following curious observation: Occlusion of the tracheal opening, care having been taken to avoid any pressure on the sac, at once arrested speech. I tried this experiment many times. Again, occlusion of the sac likewise arrested speech. I unfortunately failed to observe if this could be overcome with practice, as was the case with the use of the vulcanite plate, or whether a whisper might have been developed when the sac was closed.

The views entertained as to the significance of articulate speech make it necessary that a current of air should vibrate against a flexible hem or border. Dr. Cohen informs me that he thought the scar-like band on the posterior aperture of the sac might serve this purpose. I see no reason why this might not at least assist, while the general constriction of the circular fibers of the inferior and middle pharyngeal constrictors might act as the cause of the speech by the air vibrating against lips of muscle-ridges which existed only at the time that enunciation occurred. The motions of the sac were also to be explained by these constrictions and (as already stated) by the tongue. But why the act of respiration is in any way related to the performance of these acts is not apparent, unless we assume that the muscle-movements are part of a complicated mechanism which demands the participation of the respiratory act as well as the pharyngeal and oral mechanisms, even in the accidental circumstance of the laryngeal apparatus being absent.

The hypothesis that at first sight is reasonable, that the sac fills when the lung fills, and that sound is produced while the sac empties itself during expiration, is in harmony with the physiology of normal speech. But I cannot see how this opinion can be entertained if it be conceded that the sac did not fill during inspiration, and that the respiratory act did not affect it any more than it did any other part of the neck. But the movements of the sac were coequal with the time of enunciation, and while influenced in a measure (as in pronouncing *m*) by the act of respiration, were not dependent upon it. The idea that speech may have occurred during inspiration is suggested by the shape of the respiratory curves on the kymographion, but this was at once invalidated by the fact that the tracheal noises of expiration were always synchronous with speech, while the respiratory curve was downward instead of upward.

I venture to express the opinion that the displacement of air from the pharynx by the constriction of the lower pharynx was nearly normal, and the humping of the lingual base absolutely so. That these produced so great a change in the sac of our patient was due to the absence of a check-mechanism, the larynx itself, which thus acts in the norm as a barrier to the retrocession of the compressed air. In health the vocal bands when adducted form an almost complete barrier to the entrance of air, and in order that the bands themselves be spared from pressure, laryngeal ventricles are provided to receive and hold it. Not only is this the case, but, in the act of swallowing, these sacs may also serve a purpose of accommodating the air, which, being pushed in advance of the ingesta, would be thrown into the trachea were not a special mechanism provided. The muscle constrictors at the laryngeal orifice exist for this purpose in health. It is noted that the epiglottis is not spoken of in this connection as a factor, either in speech or as an aid to prevent the entrance of food into the larynx. It is my opinion that if it held such an attitude it would have exerted some influence in protecting the sac against the entrance of both solids and liquids in the act of deglutition.

While making the statement that the patient had voice, it is tenable that it was a voice created by the presence of an adventitious resonating chamber established in the region of the larynx, and that the utterances were of the nature of whispers reinforced by the air in this sac.

A BRIEF SPLINT-TECHNOLOGY FOR SURGEONS.[1]

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FELLOW OF THE MASSACHUSETTS MEDICAL SOCIETY.

THE objects of this paper are to treat in detail of a new material and method devised for surgical splint-making; to aid the surgeon to become the maker of suitable splints for cases occurring in practice; and to indicate lines of procedure in apparatus-making that promise rich results in general and orthopedic surgery.

THE MATERIAL.—The basis of the material employed is wood-pulp, made preferably from the crushed fiber of the poplar tree, and rolled in such fashion that the broken fibers intertwine in every direction and loosely, so that an increase of plasticity is thus given to the product. These sheets are further strengthened by having a fabric introduced between the layers of the pulp, or by interweaving with the short, crushed wood-fiber, a long jute or other tough fiber.

The sheets are rolled of different thicknesses, for adaptability to all splint-conditions. For convenience I shall designate the thickness by number,

[1] An abstract of a paper read before the first Pan-American Medical Congress, at Washington, 1893.

each unit representing a thickness of one millimeter; thus, sheet 1 represents the material with a thickness of one millimeter; sheet 2, with a thickness of two millimeters, and so on.

CHARACTERISTICS OF THE MATERIAL.—The chief characteristics of this material are stiffness or rigidity when dry, and plasticity when moist. Its rigidity can be increased *ad libitum* by the use of a silicate solution as a moistener. Its plasticity has a limit. The limit is rarely experienced and only when molding the material over certain complex curved surfaces. To exemplify: A splint cannot be directly molded over the ankle-joint anteriorly, for there are two large curves in opposite directions to be followed simultaneously, the convex curve from malleolus to malleolus, and the concave curve from above downward over the leg and instep. This difficulty, when met, can be obviated in various ways. I shall mention three of them. Take the case of the ankle-joint: An anterior splint is required for it. The proper-shaped blank should be cut from sheet No. 1 and moistened with one of the solutions to be described later. It should then be applied to the limb, care being taken to keep its outer border in contact with the skin, while the superfluous material over the anterior aspect of the joint should be pinched between the thumb and forefinger, and all of it laid or pressed over to one side; a bandage should be snugly applied to perfect the molding of the splint. (This method of "pinching and folding over" has an important application in the making of spinal jackets.) A second way consists in cutting away the superfluous material, in this case an elliptic figure, and bringing the edges of the cut portion together, and so retaining them by means of a strip of the material pasted over the cut edges. A third method is to cut a blank for each important curve and, after molding, to properly unite them.

Besides the foregoing characteristics, the material possesses that *desideratum* of a splint-material—extreme lightness. Its cheapness also deserves a passing mention.

MOISTENERS.—Water or a stiffening solution can be used to moisten the material. The advantage of water is its omnipresence. A serviceable splint can be made with its help. Such a splint should be protected from perspiration or other moisture, lest it be softened and its usefulness destroyed. It can be so protected by a covering of oiled paper or silk, by mackintosh, or best by a coat of varnish.

A stiffening solution, with several qualities to recommend its use, is that of silicate of potassium; silicate of soda is almost as serviceable. Any desired degree of rigidity can be imparted to a splint by using this solution—the amount of rigidity depending on the strength of the solution. A splint rendered rigid in this manner is not affected by perspiration, or indeed by momentary contact with fluids, as in washing. Another advantage, especially in cases of compound fracture, is that this solution renders the splint antiseptic.

In practice, the solution of silicate of potassium generally sold for surgeons' use, and further diluted with water, can be employed. The commercial solution is regarded as a 100 per cent. solution, and the percentage solutions spoken of in this paper are to be made by diluting the commercial solution with the proportion of water called for by the percentage; thus a 70 per cent. solution is made by mixing 70 parts of the commercial solution of silicate of potassium with 30 parts of water. The commercial solution should have a specific gravity of from 1.3 to 1.4.

Another useful stiffening solution is that of dextrin, in the proportion of about ʒviij to Oj of water. This solution adds some tenacity, besides stiffness, to the material treated with it. A splint made with its aid can be remoistened with water and remolded—quite an advantage in cases in which, from disappearance of swelling or other cause, a closer approximation of splint and limb is desired. In practice, dextrin (to be had of paint-wholesalers) can be carried in powder form, and a solution in water extemporized when needed. (An addition of 8 gr. of corrosive sublimate to Oj of the dextrin solution will render it antiseptic.)

MOISTENING PROCESS.—A few descriptive words should be added concerning the proper manner of moistening the material. The aim should be to get barely sufficient moisture into the material to render it semiplastic. If more moisture be absorbed, it becomes more difficult to maintain the molded splint in the desired shape while drying, and it also unnecessarily lengthens the time required to dry the splint. I find the best manner of moistening the splint-blank is to apply the fluid used, on each side of it, alternately, by means of a flat paste-brush. A little practice will enable one to judge the precise amount of moistening best suited for the purpose.

DRYING.—The time required for drying the molded blank varies, for the different sheets employed, from ten to forty minutes; the thicker sheets, holding the more moisture, require a longer exposure to heat. Any source of sufficient heat can be employed; a good kitchen fire is very efficient and, generally, convenient. While the splint is drying it is serviceable to have yarn or string wound around the moistened form after its removal from the body, to aid it to maintain the desired form, until permanent drying fixes it.

I shall briefly consider the application of splints to the human body, under the headings—

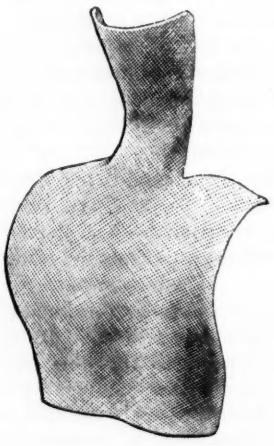
1. Head splints.
2. Trunk splints.
3. Upper limb splints.
4. Lower limb splints.

This simplicity of classification will necessarily be violated in specific cases in which compound splints, embracing parts of different systems, are constructed.

[The following four descriptions are selected from the original paper for illustration in this abstract.]

1. A CERVICAL SPINE SPLINT.—This splint is devised for fixation of the cervical vertebræ. The blank is cut from sheet No. 2 or from sheet No. 3, according as the case is that of a child or an adult. The head of the patient should be supported in the desired position while the moistened blank is being molded over the back, shoulders, neck, and occiput; the molding is facilitated by the use of a gauze bandage applied snugly over the blank. After a short retention the molded blank should be removed and dried. The neck-piece can be reinforced if desired. The complete splint is pictured in Fig. 1.

FIG. 1.

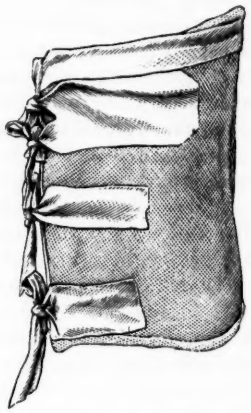


A cervical spine splint.

2. A SPINAL JACKET.—I shall here briefly suggest a technique for a simple, cheap, and serviceable jacket.

The blank is to be cut from sheet No. 1 and moistened with a 75 per cent. solution of silicate of potassium. This blank is of the simplest pattern, being sufficient to envelop the patient's body, once and a quarter around, and its width governed by the amount of spine we desire to control. The needful trimming of the blank can be done upon its first application to the body. The patient should be placed in the same position as for the application of a plaster jacket; he should have on him a tight-fitting woollen undershirt. The blank is to be applied to the body by commencing on the front about two inches beyond the median line, and keeping that portion in place, guiding the rest of it around the body so as to overlap considerably in front. A vertical line should be drawn on the overlapping piece, from the armpit; the object of this line is to give position to the hinge-joint which we

FIG. 2.



A spinal jacket.

require in the jacket to facilitate removal and reapplication. The joint is made by bending the moistened blank backward and forward along this line until the pulp is sufficiently broken—the fabric imbedded in the sheet forming the hinge. After drying the jacket, this hinge should be strengthened by gluing strips of chamois skin, one inch wide, over the hinge, inside and outside.

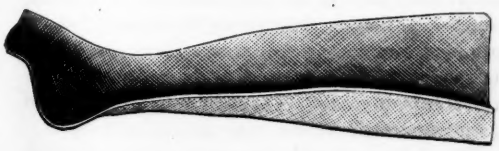
The blank having been applied to the body as described, we proceed to make it conform to the body-surface as accurately as possible. We place over the spines a large pad (two large rolled bandages, each four inches in diameter and six inches long, placed end to end, do well), which serves to press the blank well into the hollow of the back. Further conformation to the body is obtained by the "pinching and folding over" method described. Here this method is particularly advantageous, for it adds threefold to the vertical strength of the jacket, without a material increase of its weight. A gauze roller-bandage should be so applied over the whole blank as to hold it in snug apposition to the body. After a few minutes' retention the bandage should be taken off and the jacket carefully removed; in doing so the hinge described should be made use of, so as to disturb as little as possible the form imparted to the jacket. If the blank has been properly moistened, but slight aid to hold its form need be given to the jacket, till drying permanently fixes it. Thus, the foundation for a good spinal

jacket is completed. It can be reinforced as desired. Straps can be fastened to it for its adjustment, or lacing bands can be applied to it for the same purpose. Fig. 2 illustrates a spinal jacket which was molded on and worn by a boy of six years. The binding and fasteners are made of chamois skin, glued by means of a cheap liquid glue directly to the jacket. The hinge-joint is here omitted, the natural resiliency of the material sufficing for the removal and reapplication of the jacket. The jacket was made at the child's home in about forty minutes.

3. A PALMAR FOREARM SPLINT.—This is a very simple but important splint. It meets the indications that Cheever emphasizes in the treatment of a Colles' fracture. That accurate surgeon says: "The important point would seem to be . . . . . not to press the back of the wrist down in such a way, by splints, that we shall lose sight of this arch, which is so marked, under the radius. . . . . This arch must be well supported. . . . . The splint should terminate at the head of the metacarpal bones, and the thumb and fingers should be left free.[1]"

The position of the forearm for the splint pictured in Fig. 3 was that of semi-pronation; that of the wrist, semi-extension—its natural position of rest. The pattern should slightly overlap the ulnar side of the forearm, so that there will be sufficient material in the blank to be molded over that side of the forearm. The blank should be cut from sheet No. 1 and moistened carefully with a 75 per cent. solution of silicate of potassium. The blank should be applied to the palmar surface of the forearm, so that the ulnar side is overlapped by the blank. The

FIG. 3.



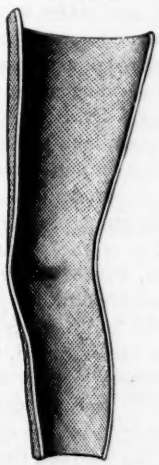
A palmar forearm splint. (Right, viewed from radial side.)

blank should then be carefully molded over the forearm in the position described. After snugly applying a roller bandage over the splint, commencing at the wrist, then enrolling the hand, and finally the arm, pressure should be applied by squeezing the forearm and splint between the thumb and fingers at a point one inch and a quarter above the styloid process of the radius, where the arch of the radius is most pronounced. The direction of the pressure, it need hardly be mentioned, is from the palmar to the dorsal side of the forearm; its object is to give the splint an arch approximating that of nature. After squeezing in the manner described for a moment, the splint should be removed and dried. A side or radial view of the completed splint is pictured in Fig. 3.

The curve of the splint caused by the arch of the radius is there imperfectly illustrated. The curve of the splint, made by molding the overlapping portion of the blank over the ulnar side of the forearm, is important, because it is the main source of the strength of this splint.

4. A LATERO-POSTERIOR KNEE SPLINT.—This splint is for fixation of the knee-joint. It is a modification of the so-called ham-splint. It differs from the ham-splint in having a surface that is applied to the lateral surface of the limb (preferably the inside), as well as to the posterior aspect. This

FIG. 4.



A latero-posterior knee splint. (Left.)

addition greatly strengthens the splint and aids its fixation. The blank should be cut from sheet No. 2 (sheet No. 3 for a very powerful limb), and moistened with a silicate solution. The blank should be applied to the limb so that the portion corresponding to the shaded part of the pattern lies over the internal aspect of the limb. The molding of the splint is perfected by applying a roller bandage snugly about it; after a moment's retention to the limb the splint should be removed and dried. A completed splint for the left knee is pictured in Fig. 4.

[1] Lectures on Surgery. By David W. Cheever, M.D. See Lecture X, Boston Medical and Surgical Journal, vol. cxxix, p. 2.

Dr. Hans von Hebra has been made Professor Extraordinary of Dermatology and Syphilis in the University of Vienna.

THE COMMERCIAL FORMS OF HYDROGEN DIOXID.

BY HENRY LEFFMANN, M.D.,
OF PHILADELPHIA.

ABOUT about two years ago (MEDICAL NEWS, April 9, 1892), a note was published by Dr. Beam and myself on the analysis of some samples of hydrogen dioxid, the brands selected being such as were in common use. The figures showed that considerable difference existed between the articles, and that some brands were decidedly inferior, both as to strength and purity. Similar investigations have been reported by others. Thus Dr. Smith, of the Yale Medical School, published in the *New York Medical Journal* of August 6, 1892, a table of analyses of many samples purchased in small amounts at retailing drug-stores. The maker's name was obtained when possible. These analyses showed much variation in quality, but the manufacturers may not be responsible for all the deficiencies observed. Some samples were found to contain no hydrogen dioxid, and others very little. The same issue of the *Journal* contains a paper by Dr. Squibb, discussing the method of assay, and giving the results of examinations of some much-used brands as sent out by the makers. Dr. Squibb gives figures only for the strength in available oxygen, but he states that several brands contain much more free acid than is either necessary or permissible. In the last number of *The Ephemeris* (January, 1894), Dr. Squibb details an elaborate study of the preparation and properties of the dioxid, but the information concerns the chemist and pharmacist rather than the physician. The papers of Drs. Smith and Squibb confirm, as far as they cover the same ground, the figures given by Dr. Beam and myself. It has seemed advisable to repeat the analytic tests, to determine if any perceptible improvement in the quality of the commercial articles has followed the publication of the analytic reports.

Incidental to the discussion of this subject, it has been shown by Dr. Squibb that a process for the assay of hydrogen dioxid, furnished by Mr. Marchand, and adopted by many, gives erroneous results, exaggerating materially the value of the sample tested. Correct methods of assay show that no solution is ordinarily obtainable in the market of higher strength than twelve volumes, and that many do not equal this. When properly prepared these solutions are not nearly so liable to decomposition as was formerly supposed. They keep for some time in a moderately cool place, and will bear gentle heating without serious loss. Many of the samples herewith noted were kept in my laboratory for several weeks at a point where the temperature was in the neighborhood of 70° F., the corks being not very tightly inserted, and a second determination was then made, the results of which are given in the table appended. It will be seen that there has been little loss, and, indeed, slight concentration has occurred in a few cases. This has been noted by others, and is due to the fact that hydrogen dioxid is less volatile than water.

One of the points indicated by the results is that reputable manufacturers should cease claiming a strength of fifteen volumes. The use of these figures may have been originally due to the employment of the erroneous method of assay noted, but there is now no justification for continuing the error, as the United States Pharmacopeia gives a correct process. On the other hand, there does not appear to be any reason that the article should be sold to the trade without some indication of strength. Many samples were found to be sufficiently decomposed when purchased, even when sent directly from the place of manufacture, to produce marked explosions when the corks were loosened. This must be considered an unfavorable point, as a good eleven-volume solution may be made that will not be so easily decomposed.

Some interest attaches to the amount and general nature of the impurities present, and determinations of a few of these have been made. It is not possible, at least not commercially practicable, to make a solution consisting of water and hydrogen dioxid only, and the material will not keep without a trace of acid. The acid is usually either sulphuric, hydrochloric, or phosphoric, and according to the standard of the United States Pharmacopeia it is required that barium shall not be present. Squibb asserts in the article in *The Ephemeris* that barium is highly objectionable, though I am not able to see how a small quantity can do harm. Only one sample of all examined by me gave a reaction for barium, and a quantitative determination showed that this sample contained 35 milligrams (about half a grain) to the liter. I cannot regard this amount as objectionable in any way. The sodium hydroxid solution used was a little weaker than decinormal.

The following table shows some very interesting points. In the first place, it is not surprising that satisfactory results are sometimes not obtained with the agent. The poor quality of Nos. 5 and 6, both from the same manufacturer, but obtained through different wholesalers, is especially noticeable. The specimens are little else than dilute sulphuric acid. Nos. 15, 16, and 17 are accompanied by a circular claiming great purity and strength, and especially claiming only a trace of fixed residue; yet it is seen that the residue is the highest of the series. These samples were all from the stock of a large general hospital, to which they were furnished by the makers as specimens.

BRAND.	Volumes of oxygen.		C.C. of NaHO for 50 c.c.	Residue from 50 c.c.	Pressure on opening bottle.	Response to test for	
	1st test.	2d test.				Sulphates.	Chlorids.
1. Oakland Chemical Company	11.0	11.2	4.5	0.028	None.	None.[1]	Marked.
2. Béné	9.9	9.8	10.0	0.106	Moderate.	Marked.	Slight.
3. Marchand	8.3	8.5	10.5	6.034	Strong.	Slight.	Marked.
4. "	7.5	.....	7.0				
5. Merck	1.1	.....	27.0	0.164	Moderate.	Marked.	Slight.
6. "	1.6	1.5	26.0	0.116	Strong.	"	"
7. Powers & Weightman	9.6	9.5	6.5	0.089	Moderate.	"	"
8. " " "	.....	9.6	7.0	.....	Strong.		
9. " " "	9.7	9.7	7.0	.....	Moderate.		
10. " " "	.....	10.2	7.5	.....	"		
11. Rosengarten & Sons	6.7	6.6	2.4	0.030	None.	None.	Slight.
12. " " "	.....	6.2	5.8	0.026	"		
13. " " "	.....	7.1	4.0				
14. Lehn & Fink	3.7	3.6	19.0	0.120	Marked.	Slight.	Marked.
15. Pouchet	8.0	8.0	7.0	0.363	Strong.	"	"
16. "	....	8.2	8.0	.....	"		
17. "	.....	8.8	8.5	0.358	"		
18. Squibb & Son	11.1	10.8	10.5	0.111	Very slight.	Slight.	Marked.
19. Drevet	8.2	7.6	7.5	0.059	" "	"	"
20. Smith-Klein-French Company	7.5	7.3	20.5	0.108	None.	Marked.	"
21. McKesson & Robbins	.....	10.0	2.2	0.031	"	Slight.	None.

It is hardly necessary to point out the other details of the table, but as an evidence of what can be accomplished I would like to call attention to the low acidity of Nos. 1 and 21, which show full strength and excellent keeping qualities.

The analytic investigation shows, therefore, that while there are several excellent brands of hydrogen dioxid on the market, there is still a great deal of inferior material, and that the reputation of a manufacturer is no assurance of quality. When it is considered that the assay of this material is easy, and its stability when properly made is satisfactory, it seems that the physicians and pharmacists have a right to require that at least a ten-volume solution, containing only a small amount of acid and of solid matter, shall be furnished. Moreover, there is no excuse for a druggist dispensing a weak preparation. He can exercise with but little trouble a control over his purchases of hydrogen dioxid, and a bottle once tested (only 1 c.c. is required for a test) can be kept so that very little loss of strength occurs during a reasonable time.

Actual trial by prescriptions at two drug-stores, one in the center of the city and the other in the northeast section, resulted in obtaining very satisfactory samples, each showing nearly eleven volumes.

Some very poor samples, in one-ounce bottles, have been obtained from special supply-houses (not dealers in drugs), but the data in regard to these will be published elsewhere.

Solution of hydrogen dioxid may be concentrated upon a water-bath to a strength of fifty volumes or more. A smooth dish should be used, and the liquid be protected from dust, for, as Squibb has shown, any rough surface promotes decomposition. Judging from the rapid evolution of gas which occurs when solutions are heated over even a low-temperature burner, it is necessary to use a water-bath. Freezing may also be used to concentrate the liquid. Tight corking does not prevent decomposition, and the practice of wiring corks leads to dangerous pressure in the bottles. I have noted in the table the existence of marked pressure in some samples, and most of these produced, on releasing the cork, a violent noise which would be decidedly distressing in the sick-room, in addition to being an indication of imperfect preservation.

[1] Contains 35 milligrams of barium per liter.

HYSTERECTOMY FOR OTHER CONDITIONS THAN FIBROID AND MALIGNANT TUMORS.[1]

BY CHARLES B. PENROSE, M.D.,
PROFESSOR OF GYNECOLOGY IN THE UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA.

UNTIL very recently the operation of hysterectomy was confined practically to two conditions, malignant disease and fibroma. The improved technique and the admirable results obtained in the modern operation for these conditions have led to its extension to other diseases of the uterus and the appendages. The most radical proposition is: to remove the uterus in every woman in whom it is necessary to remove the uterine appendages. A second less radical proposition may be thus stated: In any case of pelvic disease when there is necessary for cure an operation on the appendages that renders the woman sterile, hysterectomy is a valuable addition to the operation under the following circumstances: when the uterus is diseased; when it is likely to become so; when its removal will facilitate the operation.

[1] Read before the College of Physicians of Philadelphia, March 7, 1894.

I have been following this latter plan since June, 1893, and wish to report my results and conclusions to the Fellows of the College with the object of obtaining their views upon this new plan of treatment.

The number of cases is not large, but represents a variety of conditions. In a series of seventy-five celiotomies on women for different forms of pelvic disease, exclusive of fibroid and malignant tumors, I have found it of distinct advantage to remove the uterus in fifteen cases, which may be grouped under the following headings:

I. Cases of double salpingitis, generally pyosalpinx, the disease extending into the uterine cornua in the form of a hard cheesy nodule, or an abscess in the uterine tissue; large uterus, chronic metritis and endometritis; profuse irritating vaginal discharge, probably gonorrheal.

II. Cases of salpingitis and ovaritis; flexed or displaced uterus, with or without adhesions; endometritis.

III. Salpingitis of which tuberculosis is the probable cause.

IV. Cases of ruptured tubal pregnancy, of pelvic abscess, or of any accumulation in the pelvis in which the uterus forms part of the wall surrounding the accumulation. The removal of the uterus facilitates the operation and perfects hemostasis.

It must be remembered that in all these cases the uterus was removed as an addition to an operation which rendered the woman sterile. I think that we can consider that the removal of the Fallopian tubes renders the woman sterile, except in very rare instances.

The gonorrheal cases form a large class representing the most frequent form of salpingitis, and in this disease I think that hysterectomy is a valuable addition to the old operation of simple salpingectomy. In several of the gonorrheal cases my determination to perform hysterectomy was based on the fact that gonococci had been found in the discharge from the os uteri. In others the history of the case and the presence of gonorrheal lesions, such as inflammation of the vulvo-vaginal glands, or their ducts, or urethritis, indicated the gonorrheal origin of the disease, and finally in other cases gonococci were sought for by an assistant in the tubal contents during the operation.

In cases of gonorrheal pyosalpinx the old operation of removal of the tubes relieves the woman from the danger of rupture into the peritoneum. But it does not cure her. The disease continues in the endometrium and in the deeper structures of the uterine wall, often extending from the tubes into the uterine cornua. Careful operators have in these cases been in the habit of removing, by a wedge-shaped amputation, the proximal end of the Fallopian tube. This operation, however, requires almost the same length of time as hysterectomy, and is not followed by perfect hemostasis.

The operation of hysterectomy, however, cures the woman of the leukorrhea which is often the symptom of which she complains the most.

I have tried by all the means devised to cure gonorrheal endometritis, with but very unsatisfactory results. I have never cured it in a case in which pyosalpinx had coexisted. If we leave the uterus in these cases the woman continues to have an irritating infectious discharge, and she is not considered cured by herself or by her husband.

In posterior displacement, with salpingitis and adhesions to the fundus uteri, removal of the uterus gives more promise of cure than simple removal of the tubes. It is a mistake to suppose that the posterior displacement will remain corrected by the tension of the broad ligaments following a simple salpingectomy. In one case in my series the tubes and ovaries had been removed some years before my operation, and yet the uterus was in a position of extreme retroversion, and the pressure of the fundus upon the rectum caused such pain that for some months before the operation every movement of the bowels had been preceded by a hypodermatic injection of morphin. Hysterectomy stopped the pains and the morphin-habit.

In tuberculous disease of the tubes I think that hysterectomy should always be performed. The investigations of Williams (*Johns Hopkins Hospital Reports*, vol. iii) show that in this disease the uterus and endometrium are affected in from 40 to 60 per cent. of the cases. Unfortunately it is at present impossible to determine the tuberculous character of many cases of salpingitis by the gross appearance at the time of operation, and we are unable to determine the full extension of the disease.

In a case of salpingectomy performed last November the microscope showed tuberculous infiltration in the tubes extending to the plane of section. Had I known this at the time of operation I would have removed the uterus.

In one case of suspected tuberculosis I curetted the uterus and examined the scrapings before the operation and then performed hysterectomy on account of the probable tuberculous character of the endometritis.

The fourth class of cases in which the operation is facilitated by the addition of hysterectomy is illustrated by a case of ruptured tubal pregnancy. The woman had a ruptured tubal pregnancy on the left side. The pelvis was filled with old blood-clot which was walled in by adherent intestines above and by the uterus and broad ligaments in front. The abdominal ostium of the right tube was closed,

and the tubes and ovary were bound down by adhesions. In this case the removal only of the blood-clot and as much of the sac as was practicable would have left behind a large bleeding uterus destitute on two-thirds of its surface of any peritoneal covering—and functionally useless when the tubes and ovaries were gone on each side. Its removal, however, enabled me to secure quick and complete hemostasis and to avoid an elaborate drainage of the pelvis.

I know of no way in which the removal of what has been called the emasculated uterus injures the woman. The results in large numbers of hysterectomies for carcinomata and fibromata show that from the mechanical and functional points of view the remaining pelvic contents are uninjured.

Unlike the ovary, the uterus does not seem in any way necessary for the maintenance of womanly traits. I think that, in cases of salpingitis requiring treatment which renders the woman sterile, the removal of the uterus along with the tubes does her less harm, from a psychologic standpoint, than the common operation of removing the ovaries with the tubes. I think that the ovaries, or parts of them, should be left in all cases where practicable, especially in young women.

An objection urged against this form of hysterectomy is the increased danger of the operation. It is undoubtedly true that in some cases the prolonged time of operation, even if only ten or fifteen minutes, may be of serious harm to the woman. In such cases I consider that the operation is improper. The determination to remove the uterus in the class of cases under consideration should depend upon the condition of the woman when she is on the operating-table. If her condition is such that she can endure the increased operation, then I think that hysterectomy is a valuable addition to our treatment in all cases of tubal and ovarian diseases requiring an operation which renders the woman sterile, provided that the uterus is itself diseased to such an extent that it will not readily yield to local treatment; or is so implicated in the pathologic condition in the pelvis that its removal facilitates the performance of a complete operation.

The statistics with which I am familiar show that the removal of the uterus under these circumstances is attended with as small a mortality as the operation of salpingectomy. All the cases in my own experience have recovered.

Dr. William Leishman, until recently Regius Professor of Midwifery in the University of Edinburgh, died February 18th, aged sixty years. He was the author of a *System of Midwifery*, which passed through four English and three American editions.

CLINICAL LECTURE.

OSTEITIS—FISTULA IN ANO—GOITER—HYGROMA—CARCINOMA OF THE STOMACH—SEBACEOUS CYST—RACHITIS, GENU VALGUM—CONGENITAL TORTICOLLIS—ANKYLOSIS OF THE ELBOW-JOINT WITH DISLOCATION OF THE RADIUS.

BY JOHN B. HAMILTON, M.D., LL.D,
OF CHICAGO;
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[Stenographically reported for THE MEDICAL NEWS.]

OSTEITIS.

THIS patient comes to us from a distance, having cicatrices above the knee-joint on the inside of the femur, and a fistulous opening beneath the joint, with a history of having had several abscesses from which small exfoliations of bone have been removed. At these times he has had great pain. At the present time the inflammation has diminished and the sinus is reduced to a small size. Shortly after the tract thus healed pain and swelling set in and continued until an abscess formed, burst, or pointed either in the old tract or somewhere adjacent to it, and he is at present thus somewhat relieved. Such a history can only point to continuous bone-disease of some kind. The pain and the history show us the cause of these repeated abscesses. If we can keep this sinus open continuously it might discharge itself, and the pus formed would be drained without the formation of this collection of matter about the bone. When this fistulous tract is obstructed, the abscess begins to redevelop and the pus-microbes increase.

We will now investigate the condition of the bone. In the popliteal space we see an old opening which is now almost closed. A little anteriorly, on the lateral surface of the thigh, we find an open sinus. I will pass a probe into it and endeavor to reach the seat of the abscess. These old abscesses and long-continued fistulous tracts, having a history like the present case, are very seldom straight; they are almost always tortuous, and the opening that leads to the bone is found in a different direction from that portion of the surface where the fistula is seen. The probe does not reach the bone, but passes into the intermuscular septum. The pain complained of by the patient is not in a place where there is an opening or fistulous tract. I think best to open the fistulous tract as fully as possible, in order to trace and follow it until I reach its ultimate point. I find the tract passing posteriorly to the femur, but doubtless coming from the other side. We will therefore make an opening on the anterior portion of the bone with a view to reaching it more directly and by following this tract. I shall select here the border of the quadriceps. You notice the separation between the muscles. I have dissected down between the intermuscular septum so as to reach the bone. I shall now separate the tissues carefully and inspect the surface of the bone, which is, as I suspected, in a morbid state. The periosteum is diseased. I incise it and come directly down upon a small abscess which you see underneath the periosteum. The bone is denuded at this point and the periosteum separated from it, and here you

notice the beginning of the abscess. We shall now follow the sinus, and we find we can pass underneath the periosteum, which we lift with Kocher's director as it is separated from the bone. We find all of the bone in this vicinity suffering from inflammation. If you will listen attentively for one moment you will hear a hard ringing sound of extreme density when I strike the bone—a sound which cannot be emitted on striking natural, healthy bone. This portion of bone which I touch with the director is practically dead. It has become hardened or eburnated in the progress of the disease.

As I trace downward, I find that, at a point about an inch and a half below, the periosteum again becomes attached to the bone. I shall now chisel away this eburnated portion of the bone, and thus hasten the natural process of repair. The portions of bone now being removed are almost devoid of life. It would be but a short time before there would be separation of this necrosed from the living bone, which has already begun to grow about it, and by being incased we would have a sequestrum formed. This sequestrum would have to be absorbed or taken away by the slow process of Nature—a year or two, or even more, being required to accomplish the process. We may hasten it very materially by chiselling the bone away. Dead bone is simply a foreign body, and can serve no useful purpose in the animal economy. By waiting a sufficient length of time Nature would accomplish the result we are now trying to effect almost without operation, but we can accomplish it much more quickly and effectively by operative measures. I have now cut through the shell of dead bone, and the bone adjacent is osteoporotic, as must be expected from the steady inflammatory process that has been going on in this vicinity. We will now flush the wound with water so as to remove any spiculæ that may remain, and then pack it with iodoform-gauze. Iodin has been added to the water which we are about to use, and I shall see that it penetrates every portion, not only of the diseased surface, but the fistulous tract through which pus has been making its escape to the surface. We will now pack the wound with iodoform-gauze, then turn the patient on the side and scrape out with the curet all old granulation-tissue which, if allowed to remain closed up, may possibly become a pyogenic center. If the opening in the bone were more extensive I might use the bone-chips first brought into prominence by Professor Senn, but in so shallow a wound it is not necessary to use them. The object of the decalcified bone-chip is to afford a framework for the new granulations to rest upon, so that the tender granulation does not break down during the process of repair. It answers the same result as a sponge when it is properly rendered aseptic and introduced into such spaces. We accomplish the same purpose in smaller wounds by the introduction of iodoform-gauze. This has also another effect, that of preventing the oozings that not infrequently follow an operation of this character.

I shall now scrape out all of the granulation-tissue from the edge of this fistulous tract down to its point of origin, and while so doing irrigation will be maintained in order that the débris may be washed out. I will now unite the wound and shall expect primary union. You will notice that I push the knife horizontally under the edge of this incision so as to free the skin from the old cicatricial tissue, which is done in order that it may unite easily without tension and secure perfect apposition of the edges of the wound; otherwise we would doubtless find that the cicatrix would interfere with the process of repair. We will now apply a bandage to the knee and then take off the Esmarch. If I were not perfectly sure no important vessel had been cut I should take off the Esmarch before closing the wound, but I am certain none has been divided by the knife. I have followed in the line of the cicatrix and know there can be no hemorrhage resulting from this wound, but before we remove the Esmarch we will put pressure on it by a compress made of iodoform-gauze.

FISTULA-IN-ANO.

This patient is one that I have not yet examined, but I understand he has some disease of the rectum which is quite painful. I saw him a short time before the clinic and found that it was impossible to examine him until he became under the influence of ether. Externally there are some small projections. I find, on close examination, an opening in one of these projecting points. Following it as far as I can with the probe, and with the index finger of the other hand in the rectum, I find that the probe passes directly into the anus, and therefore recognize that we have to deal with a fistula-in-ano. I will search one of the other points. I also find a small hemorrhoidal tumor. I now examine the mucous wall farther up in the rectum, and finally I pack the rectum with gauze in order that the fecal matter may not obscure the operation. We then irrigate the rectum with sterilized water. We will now pass in a grooved director, then cut out this anal fistula. The operation is easily performed. I now examine the tract for other branches of the fistula, as these fistulæ are very apt to extend around the bowel, and the peculiar condition of the parts leads us to believe that we have to deal with a fistula of that sort. It constitutes what is known as a horseshoe fistula, because it traverses the circumference of the bowel in the shape of a horseshoe. If you simply cut one opening, you do not entirely remove all of the diseased portion, and a "relapse" occurs, to the disgust of the patient. I find the anterior mucous wall very much diseased and studded with soft hemorrhoids. At the verge I shall simply remove these tumors, touching them with the Paquelin cautery at the same time, to prevent hemorrhage; and searing the wound with the cautery, I bring the surfaces together, so as to secure primary union, if possible. I have previously cut out the entire fistulous tract and seared it with the cautery. I shall bring the edges together and unite them. The gauze is removed, and we now insert a large, but short, rectal tube, which you notice is of rubber and has iodoform-gauze wrapped around it. The tube is inserted in order that gases and fecal matter may pass through it. This prevents undue contraction of the sphincter muscle, and at the same time allows pressure from within, so as to prevent hemorrhage, which might otherwise occur.

GOITER.

We have here the commencement of a bronchocele or goiter. You notice the swelling extends to the right of the left sterno-cleido-mastoid muscle. The patient has had some applications of iodin made to the front, which

have blistered the skin, and from which she has just recovered. These goitrous enlargements are quite common in this vicinity. They have been treated by injections of carbolic acid. I am firmly convinced, after watching its effects for two years, that extirpation affords the shortest, if not the safest, remedy in these cases. We may extirpate the entire thyroid gland at one time, having in mind myxedema, a condition which is always to be avoided, if possible, by partial extirpation; at the same time the cases of myxedema occur most frequently in those localities where cretinism prevails without the operation. I do not believe it has been clearly proved that myxedema invariably follows extirpation of the thyroid gland. In some cases I have removed one-half of the gland, and in others the entire gland, and have yet to see a single case of myxedema following it. In view of the present state of surgery, it would perhaps be wise to leave a small portion of this gland.

HYGROMA.

We have here a small tumor on the side of the neck, soft, elastic, non-fluctuating, attached to the skin, apparently not glandular, a little painful, and which has existed since last May. I said painful—I mean painful under pressure, because the patient winced at the time of the examination. I shall explore it with an exploring-needle. The point of the needle is followed by watery blood only. The tumor does not contain pus, and is probably one of those small hygromas or watery cysts attached to the cervical fascia. They should be carefully distinguished from branchial cysts, which are deep in the branchial clefts. They are comparatively easily removed, and I proceed to the immediate removal of this one.

CARCINOMA OF THE STOMACH.

This patient was before the clinic about three months ago. He had at that time symptoms of carcinoma of the stomach, and I advised him to enter the hospital in order that we could, by colonic flushing, remove the fecal matter from the colon, diminish the tenesmus, and then by careful observation make a more accurate diagnosis than was possible at that time. However, I made a rough judgment at that time that he was suffering from carcinoma, and that the disease would progress. I find now a very distinct tumor, and there can be no doubt about the nature of the disease. I will map it out by percussion. You will notice that when I reach a certain point there is entire flatness. My hand is away from the tumor. See how resonant the intestine is where it is healthy. Placing my finger over the swelling, I can map out the colon where it becomes charged with fecal matter. Near the sigmoid flexure we find dulness again; over the surface we found resonance. The patient vomits daily, two or three hours after eating. He tells us that he eats very little solid food, and emaciation is now in rapid progress. Here the pylorus is involved and probably also the duodenum. It is usually stated that carcinoma of the stomach, or a tumor of the stomach, is accompanied by vomiting whenever it affects the pylorus. There is usually no vomiting when the greater curvature alone is involved. When there is obstruction to the outward flow of material from the stomach, then there is regurgitation and vomiting. The rough diagnosis made two months ago is confirmed now, and in a very little while cachexia will begin to show itself in the general appearance of the patient. I would still advise the man to go into the hospital and prepare himself for a gastro-intestinal anastomosis which can be made, and which will somewhat prolong his life.

SEBACEOUS CYST.

This patient has a tumor at the left of the right nipple and at the right of the border of the sternum. The skin is quite red, in a state of inflammation, and is almost ready to break down. On pressure I find it fluctuates. It is about the size of an English walnut, and we learn that it has existed for a period of two years. I have not asked the question, but I should think it is not painful. It is painless, the patient says, although he complains of a little smarting from the effect of rubbing of the clothing on the tumor. The tumor has the feeling of soft cheesy material, and I have no doubt that it is a sebaceous tumor, the same as the sebaceous tumors that occur on the scalp. In this case it is on the breast. Here, as elsewhere, the cause of the tumor is due to the retention of sebaceous material in the duct at the root of the hair. It is a true cystic tumor. The duct becomes dilated by reason of the retention of the natural fluids in the duct.

The patient will now be prepared, and we will proceed to remove it by incision. I find it is confined to the skin, it is movable, and it will not therefore be necessary to go very deeply into it. The tumor can be removed in two ways, either by an elliptic incision including all of the diseased structure, or by a simple incision directly over it, turning out the sebaceous contents and then tearing out the sac from the underlying tissues with forceps, which is one of the easiest ways of removing a sebaceous cyst. The tumor is non-malignant. Here I am able to enucleate the tumor entire, with its capsule, with the handle of the scalpel. We now suture the little wound and expect primary union. The cyst will not recur after operation. The wound will be dressed with a little iodoform-collodion, after having made it perfectly dry with antiseptic gauze.

RACHITIS, GENU VALGUM.

The next case I present to you is a child, two years and six months old. In a case of rickets we generally expect delayed dentition. We have here a case of genu valgum, and it probably depends upon the general condition of rachitis. The chest-walls have in some way had their nutrition interfered with and are misshapen. It appears from the history of the case that the child had a febrile attack last winter. Now, the genu valgum in this case depends on two things: first, weakness of the tibia, and second, failure of growth of the external condyle of the femur. The internal condyle is distinctly longer than the external in this case, hence the operation proposed has been that of chiselling apart the longitudinal section of the internal condyle so as to slide the condyle in the direction of the incision, and thus straighten the joint. A linear osteotomy, or section of the femur just above the condyles, is a favorite operation for this condition. Remember that the tibia itself is perfectly straight in the majority of these cases, and so it is in this case. The tibia and fibula are straight. But there is here a decided lengthening of the internal condyle of the femur, this condyle failing to grow, owing to imperfect nutrition,

and we have the condition you observe. The other leg is straight.

The question of operation is rather a simple one. We divide the femur with a chisel above the condyles; in a short time an abundance of callus is thrown out, which lengthens the bone. I prefer linear osteotomy to the Ogston operation of making a longitudinal section of the femur. The bone can be separated with a few blows of the chisel, the wound united, and covered with iodoform-gauze. The limb is then fixed in proper position with plaster dressing. When recovery takes place the limb will be straight, and the patient be able to walk upon it. There is no chance about this operation, and the only mishap that could happen to the joint would be the non-union of the bone. It is not at all likely in a child of this age, and the ease with which the bone is controlled, as well as the upper shaft of the femur, is such that it is greatly to be preferred to separating the internal condyle.

CONGENITAL TORTICOLLIS.

Here is a case of congenital wry-neck, from shortening of the left sterno-cleido-mastoid muscle. A section would doubtless restore the neck to its normal position, and if there is no paralysis of the opposite side it would be indicated. That it is not due entirely to paralysis is evident from the fact that the head cannot be restored to its normal position without great traction on this muscle. It was probably paralytic in the beginning, but now there is contracture of the tendon. There is a little thickening about the center of the sterno-cleido-mastoid muscle, and doubtless an operation would restore it. (The operation was successfully performed a week later.)

ANKYLOSIS OF THE ELBOW-JOINT, WITH DISLOCATION OF THE RADIUS.

This man has ankylosis of the elbow-joint. He says he received an injury four weeks ago. The power of rotation of the wrist is lost, and there is inability to flex the forearm, and a distinct deformity at the elbow-joint. On examining the ulna, which we can do by tracing its posterior border, beginning with the olecranon, and following it down continuously to the styloid process, there is no break in the line, and no deformity in the ulna. The motion of rotation is mostly performed by the supinators and the pronators of the forearm, the supinator longus and brevis, and the pronator radii teres and the pronator quadratus. The principal action is upon the radius, the ulna being used as a fixed point, around which the radius revolves. The radius must be the bone involved. If it were a fracture, we should have some sign of callus, but there is none such here, except a thickening at the elbow-joint. You will notice how much wider the left elbow is than the right elbow. The injury therefore must have been at that point. My fingers rest on the condyles of the humerus, and the injury therefore has been to the condyles of the humerus, not to the bones of the forearm. We will further trace the humerus and the attachment of the triceps. Taking the olecranon as the starting-point, I grasp the humerus upon the sides, and I find a thickening. The injury has been to the condyles of the humerus, probably a fracture above the condyles, and splitting. At the same time there has been that curious condition which has so frequently failed to be diagnosticated at the time of the injury—*i. e.*, dislocation of the head of the radius—a condition that gives surgeons more trouble than any other form of injury about the elbow-joint. Very often I have seen elbows like this, when a fracture had been properly diagnosticated and set, but at the same time the dislocation of the head of the radius entirely escaped notice. We know the radius is dislocated, because we can trace the bone to a point anterior to the joint. We commence at the lower border of the radius, just as we did with the ulna, trace it directly upward, and we find it rests anteriorly to the joint. By means of a pair of calipers we can measure the difference in these two joints. I place my thumb on the head of the radius and a finger on the olecranon, and you see the difference is very marked. The head of the radius is out of place. To demonstrate this, I place my thumb on the projecting part, and then rotate the wrist. The bone rotates under my thumb. There is now no relief for this condition, except cutting out of the head of the radius. The only time to reduce it was immediately after the accident. I shall operate on a patient at the Marine Hospital for the same condition in a few days, but it has existed for a much longer period. The condition is one of permanence; it will last this man through life, as it is impossible to reduce it at this time, on account of the thickening that has gone on; an exudate has been thrown out, and there has been consolidation of it. There is contracture of the tissues about it. I advise this patient to submit to excision of the head of the radius.

CLINICAL MEMORANDA.

TWO CASES OF CONGENITAL HYPERTROPHY OF THE FINGERS.[1]

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CONGENITAL hypertrophy of the fingers or toes is stated by Bradford and Lovett[2] to be "a condition which is occasionally encountered, but which is decidedly rare. It is, perhaps, noted at birth that one digit is larger than the rest, and with the growth of the hand, this abnormally large finger remains proportionately the same, growing more rapidly than the other fingers. It is a hyperplasia of all the structures, although sometimes more marked in the muscular and areolar tissues than in the others. The arteries going to these fingers are larger and the temperature higher than in the normal fingers."

CASE I.—Gertrude P., aged eighteen months, came under observation February 24, 1893. The family history was excellent excepting that a first cousin, a female on the paternal side, had webbed fingers of one hand.

This child was born with the index and middle fingers of the right hand distinctly larger than those of the opposite hand. During the first year of life these fingers did not appear to increase in size much more rapidly in proportion than did their fellows; but during the past

[1] Read before the Orthopedic Section of the College of Physicians, Philadelphia, January 19, 1894.

[2] Orthopedic Surgery, p. 532.

six months the rate of growth in the diseased digits has received great impetus. The mother states that the increase during this latter period has been both actually and relatively very great as compared with the preceding six months. An interesting possibility of maternal impression is connected with the history of this case. When two months pregnant of the child under consideration, the mother was sitting in a street-car holding the index and middle fingers of the right hand within the grasp of all the fingers of the left. Some accident happening to the horses, she squeezed the two fingers of the right hand immoderately for some minutes with the left hand. For some time afterward the squeezed fingers were more or less palsied and the seat of much pain. From that time she was fearful that she had in some manner injured the child, and although she had not distinctly announced her belief that the corresponding fingers of the child would be the seat of defect, yet she was certain that some harm had come to the embryo.

ance of hypertrophy, although no pitting takes place upon pressure being exerted. To the touch these tissues feel similar to the overgrowth of skin and cellular substance produced by long-continued congestion of a part. The skin is thin and mottled red, especially upon the flexor surfaces. Sensation appears to be normal. A thick web connects the two diseased fingers as far forward as the second inter-phalangeal articulations. The following comparative measurements were taken: Length of right index finger from metacarpo-phalangeal joint downward, 2¼ inches; of the left, 1½ inches. Right middle finger, 2½ inches; left, 1¾ inches. Circumference at second joint of right index, 2¼ inches; at same point of left index, 1¼ inches; same point on right middle finger, 2½ inches; left, 1¼ inches. The nails of these fingers are enlarged proportionately to the size of the digits, but have a defective, unfinished appearance.

The child had been treated at various times by elastic

CASE I.

CASE II.

Excepting the diseased fingers the child is absolutely healthy and well developed in every respect. The overgrowth begins immediately beneath the metacarpo-phalangeal joints, these being practically normal. The bony phalanges are hypertrophied. The interdigital joints are loose and permit of some lateral motion. Flexion for more than one-half of the normal extent is impossible. The terminal phalanx of each affected finger is especially prone to excessive extension. The articulating surfaces of the inter-phalangeal joints, as well as the ligaments, are evidently defectively evolved. Power of movement in the fingers is limited. Flexion is very weak, but extension is comparatively strong. Voluntary lateral movement of the digits is practically absent.

The tissues present a swollen and edematous appear-

compression, liniments, sorbefacients, and other measures, without the slightest benefit.

Amputation presenting the only hope of relief, I accordingly removed the fingers at the metacarpo-phalangeal articulation by antero-posterior flaps. A large pad of fibro-fatty tissue was also dissected out from the palm. The parts were exceedingly vascular and a number of catgut ligatures were required. A continuous silk suture, dressing, and splint completed the procedure. Primary union throughout resulted in a very few days. At last accounts the whole remaining portion of the hand was in normal condition.

A dissection of the removed members showed that hypertrophy and degeneration were present in all of the structures of the fingers, and a microscopic examination made by Dr. Charles W. Burr demonstrated that

this hypertrophy was due to a tremendous increase of the adipose and connective tissue.

CASE II.—The child, Martha E. S., is twenty-two months of age. There is no history of a maternal impression, and the family history is negative. Several other children are normal. This child was born by breech-presentation and was almost asphyxiated by the cord being wound around the neck. There was a deep and well-defined groove encircling the left forearm below the elbow, which has grown more shallow, but still is quite prominent and well defined. Below this, great lividity of the forearm and hand persisted for some weeks after birth, but is now confined to the fingers and back of the hand. The arm below the groove was studded with very hard nodules, varying in size from a pea to a small egg. These at first appeared to be attached to the bones, but at the end of a year had all become freely movable. One large hard nodule was also present above the elbow and attached to the humerus. This has entirely disappeared. The condition of all of the affected parts has been slowly improving and at the time of my examination only the fingers and metacarpophalangeal regions are affected with lividity and hypertrophic nodules. There is also a condition of cavernous angioma affecting the fingers and thumb in spots, while in some places dark blood balloons out the thinned integument. Motion and sensation are perfect throughout. The bones, joints, and muscles are unaffected; the skin, subcutaneous vessels, and adipose connective tissue alone being diseased. The palm also is unaffected.

Under elastic pressure and constant application of 10 per cent. of ichthyol in lanolin, marked improvement has taken place in six months and ultimate disappearance of the hypertrophic nodules appears probable. The cutaneous circulation has also markedly improved and the angiomatous condition is disappearing. The groove upon the forearm is likewise growing smaller.

CONGENITAL HYPERTROPHY OF THE FOOT.

BY GEO. ERETY SHOEMAKER, M.D.,
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A DIAGNOSIS of congenital hypertrophy must not be lightly made. In some cases atrophy of other parts may cause a simulated hypertrophy of corresponding structures. This is particularly true in hemiatrophy affecting one-half of the face or of the body. Cases of this condition have been reported by Osler, Bradford, Stanley Boyd, C. H. Golding-Bird, and others. It is no doubt of central origin, and may be analogous to infantile paralysis, as suggested by Golding-Bird.[1]

Hypertrophy of a part of the face does occur, however. Stanley Boyd[2] reports a case of enlargement of the left half of the face below the zygoma, including the tongue and the inferior maxilla. D. W. Montgomery[3] also reports a case of hypertrophy of the left side of the face.

Pseudo-hypertrophic paralysis can usually be recognized with accuracy. It is a primary disease of muscle, and, while it may be congenital, it follows a definite course, and is accompanied or followed by a definite weakness or paralysis. Akromegaly is a general disease, not congenital, developing usually in adolescence, and slowly progressive. It involves several portions of the body at the same time, as the hands, head, feet, tongue, lower jaw, or thorax. There is said to be invariably a spinal curvature.

Angiose enlargements should be possible of discrimination by touch and general appearance, including color and the presence of enlarged vessels. Myxedema is a disorder that is limited to soft tissues, and is usually progressive.

Various arthropathies of central origin must be excluded. There is also a rare form of hypertrophic osteoarthritis which develops in connection with certain pulmonary conditions, such as empyema.

A number of diseases of the skin are classed as hypertrophies by dermatologists, such as ichthyosis and

elephantiasis Arabum. Among these, sclerema neonatorum is one that in the infant might give rise to confusion. It is described by Duhring as appearing usually at birth, and consisting of a diffused stiffness and hardness of the cutaneous and subcutaneous tissues, accompanied by coldness, edema, swelling, discoloration, lividity, and general circulatory disturbance. It is usually fatal.

In regard to the surgical treatment of true hypertrophies, little need be said. The tissue is often of such a character as not to lend itself readily to plastic work, owing to deficient nerve-supply and blood-supply. Frequently but little can be done, owing to the diffuse nature of the enlargement. Those progressive diseases that are of central origin are not amenable to operative treatment.

The case herewith reported is that of a girl, aged nineteen, from a mountainous region in this State, one of fourteen children, of whom one had a supernumerary thumb, this being the only significant point of family history

[1] Guy's Hosp. Rep., xlvii, 1890.
[2] Internat. Med. Mag., Nov., 1893.
[3] MEDICAL NEWS, July 15, 1893, p. 61.

obtainable. She has a history of frequent attacks, apparently of hystero-epilepsy, during the past three years, not directly connected with menstruation. This function, however, has been very irregular for the same period, dating from a severe illness of nearly four months, attributed to overeating ice-cream during the flow. Dysmenorrhea is severe, the pain preceding the flow. The patient has hypermetropia and an internal strabismus of the right eye. Few individuals would appeal to so many specialties in medicine.

The deformity, which was noticed immediately after her birth, affected the outer portion of the left foot, as seen in the accompanying photograph, which shows both feet. The girl was large and well formed, with a well-developed muscular system. The only asymmetry above the ankle, beside the strabismus referred to, was in the calves of the legs, the left being ¾ inch larger in girth than the right. This is a true asymmetry, for the right calf is usually larger than the left in right-handed persons. Owing to the marked dysmenorrhea and the possible relation of the epileptoid convulsions to pelvic disease, a thorough examination was considered justifiable, and was made during the anesthesia induced for the operation on the foot. The uterus was small, almost infantile, measuring 1½ inches. There was no ovarian or tubal abnormality. A firm band of connective tissue, ¼ inch wide, crossed the vestibule from a point immediately behind the urethral orifice to the posterior vaginal wall, somewhat to the right of the median line. It appeared to lie behind the hymen.

The deformity of the foot, as will be seen in the photograph, began just below the external malleolus and involved bone, muscle, and skin. The three outer toes were affected, together with their metatarsals, the outer three-fifths of the sole of the foot, and a corresponding portion of its dorsum. Aided by a firm pad, covered with callus, on the sole, the thickness of the foot was increased nearly three times; the length was increased about one inch by the hypertrophy of the outer toes, while the great toe and the second were normal, as were all the corresponding structures on the inside of the foot.

The skin gradually changed from the normal upon the dorsum over the second metatarsal to dense, hard, immovable tissue over the toes and the outer edge of the foot. It was normal in color and smooth, except for the thick callus upon the sole. The toes were particularly hard and inelastic, and it was evident that the tissues underlying the skin were very hard also, and that the disease was not simply a skin-lesion. Inspection and palpation excluded an angiose enlargement; a true scleroderma is an atrophy and not a hypertrophy. Elephantiasis was out of the question. Dr. Milton B. Hartzell kindly saw the case with me. Having carefully excluded akromegaly, or other disease of nervous origin, and the opinion that it was a simple hypertrophy being confirmed on consultation with Dr. J. H. Lloyd, it was determined to retrench the foot.

The girl was obliged to work for her living, and it was not thought wise, for appearance' sake, to weaken the foot by removal of metatarsals or other essential structures, particularly as there was some risk in obtaining a good operative result.

It would have been impossible to operate through sound tissue and secure good flaps without removing all of the distal half of the foot except the great toe. The vitality of the tissues was considered very low, and the result vindicated the opinion. The two outer toes were therefore amputated where they joined the metatarsals, and the third toe in its continuity. An incision along the outer edge of the foot enabled a large flap to be laid off the sole, when all the hypertrophied subcutaneous connective tissue was removed which it was considered safe to disturb without endangering the plantar flap. The skin appeared to be about one-half an inch in thickness and extremely tough. The muscular tissue exposed was pale and rather soft. The abductor minimi digiti and the short flexor were much enlarged, and were removed in great part. The outer metatarsal was distinctly enlarged. All vessels were tied with catgut. The parts, particularly the skin, did not appear to have even a normal vascular supply, yet the general oozing, though slight, was continuous. This was due to the great hardness of the flaps, which prevented the usual contraction of the capillaries and the shrinking of the tissue under hot water. This oozing continued for ten days, filling the wound-cavity and soiling several dressings. Fortunately the wound remained aseptic throughout its course, and free drainage was provided; but about half an inch of the edge of the upper flap slowly separated by a sort of dry gangrene, requiring several weeks in the process. It was meanwhile a source of congratulation that no essential portions of the foot were uncovered, as might have been the case had a more radical excision been performed.

The final result was excellent. Though still somewhat broader than the other foot, the great improvement was very satisfactory to the patient, who writes, after the lapse of several months, that further shrinkage has taken place. The nervous condition present was of much interest, and received careful study by Dr. Lloyd. The convulsions were general, with well-marked opisthotonos. After the foot had healed these convulsions increased in frequency, twenty or more occurring every day, so that the general health suffered. It is of some interest to recall that there were several other hysteric cases in the same ward, so that it became necessary to isolate the girl. As has been said, these attacks had occurred for several years previously.

While under the anesthetic rapid dilatation of the cervix was performed, with the hope of stimulating the nutrition of the infantile uterus and of possibly favorably affecting the dysmenorrhea. Apparently this was not accomplished while the case remained under observation. No further gynecologic treatment was considered wise.

An interesting point is the situation of the hypertrophy on the outer border of the foot. Charcot has called attention to the fact that it is the little-finger side of the hand that is usually involved in such processes in the upper extremity, and the analogy is followed in this case.

MEDICAL PROGRESS.

The Conduct of Ordinary Labor through External Examinations Solely.—Leopold and Spörlin (*Archiv f. Gynäkologie*, B. xlv, H. 2, p. 337) make a warm plea for limiting examinations made in the course of ordinary

labor to the external parts, and adduce the advantages of such a course. Infection is thereby avoided; the natural sense of modesty of the parturient is not offended; and careless rupture of the membranes is avoided. Skill in external examination is acquired with reasonable readiness. In the large majority of cases such examination alone is sufficient for the recognition of the position and presentation of the fetus, and for the study of the course of an ordinary labor. As there can be no objection to its frequent exercise, abnormalities of parturition may the more readily be detected early, and means of correction promptly employed. Experience soon teaches the difference in the position of the fetus assumed in case of pelvic contraction on the part of the mother. The position and presentation having been recognized by external examination, internal examination for the determination of possible pathologic conditions of the birth-canal need be but brief, and can be conducted with great care. For the attainment of this desirable result it is essential that the obstetric pupil familiarize himself thoroughly with the conditions of normal labor as determined by physical external examination, as well as with the physiology of normal labor. Obstetric operations are principally to be taught upon the phantom.

The Effects of Ligature of the Coronary Arteries.—MICHAELIS (*Zeitschr. für klin. Med.*, B. xxiv, H. 3, 4, p. 270) has confirmed the observation that ligature of the coronary arteries of the dog is as a rule followed in the course of two minutes by irreparable cessation of the action of the heart. The loss of blood or the reduction of temperature consequent upon the operation does not suffice to bring about this result; but these, on the contrary, render the animal the more resistant and defer the cessation of cardiac action. There is a difference in reaction to ligature of the coronary arteries between rabbits and dogs; in the former *restitutio ad integrum* may be brought about after the heart has ceased beating by massage of the heart, while in the latter this seems impossible. The coronary arteries of the dog anastomose with one another. The explanation of the much slighter influence exercised upon the action of the heart by complete ligature of the veins (in the sequence of which irregularity of cardiac action does not appear before an hour), as compared with the effects of ligature of the arteries, is to be found in the considerable flow of venous blood through the foramina Thebesii directly into the cavities of the heart and the consequent entrance of fresh blood through the coronary arteries. Ligature of the coronary arteries is followed by pulmonary edema.

Seborrheic Eczema is discussed fully in a recent monograph by UNNA (*Sammlung klinischer Vorträge*, New Series, No. 79, Leipzig, 1893), who was the first to direct special attention to its peculiarities five or six years ago. The affection is characterized by (1) parakeratosis of epidermis; (2) epithelial proliferation; (3) inflammation of the corium, variable as to depth; (4) augmentation of the fatty secretion of the skin, together with increased activity of the sweat-glands. The disease is microbic in origin, and Unna believes that he has defined two species of organisms, the flask-bacilli (Malassez's spores) and the morococci (mulberry cocci), the former being found chiefly in the crusts and scales of the scalp, the latter in the scales of the body, especially if moist. [Seborrhœa oleosa is regarded by Unna as being due to an affection of the sweat-glands or coil-glands, and as being therefore really a hyperidrosis.] In typical cases the scalp is first attacked, the disease usually occurring between the ages of twenty and thirty. When the hairless regions are involved the diagnosis is not so easy, but the sternal region and the back between the scapulæ are favorite localities. Cleansing the patches with spirit of soap, and the use of ointments of sulphur, constitute the best remedies and are generally effective in curing the disease, though relapses are common.

Allocheiria in the Sequence of Diphtheria.—GAY (*Brain*, part lxiii, p. 431) has reported the case of a girl, thirteen years old, in which four or five weeks after the onset of an aggravated attack of diphtheria fluid regurgitated through the nose, and the voice was extremely shrill and almost reduced to a whisper. Near vision became deranged and diplopia supervened. The pupils were dilated, and reacted feebly to light and in accommodation. The internal recti were paretic. There was no actual paralysis, but a generally distributed weakness. The gait was faltering; station was unsteady; knee-jerks, elbow-jerks, and chin-jerk, as well as the cutaneous reflexes, were abolished. There was considerable ataxia in all four extremities. The sense of hearing, and probably also that of taste, was preserved, but the sense of smell was lost. Slight touches were not perceived, but firmer ones were referred to exactly corresponding points on the opposite side of the body. There was no delay in the transmission of sensory impulses and no polyesthesia or paresthesia. Heat was well discriminated from cold, but the muscular sense was lost in all four extremities. The soft palate was only slightly paretic, but a laryngoscopic examination could not be made. The symptoms gradually ameliorated, and the child was in a little while on the way to recovery.

THERAPEUTIC NOTES.

Salicylated Collodion for Lupus.—SYMPSON (*Practitioner*, No. 308, p. 96) reports the successful employment of the following formula in the topical treatment of lupus vulgaris affecting the skin:

℞.—Acid. salicylic. . . . . ʒj.
Ext. cannabis indicæ . . . gr. x.
Collodii flexilis . . . ad ℥j.—M.
Fiat pigmentum.
S.—Apply topically.

Ammonium Bromid for Tetanus.—NATH (*Indian Medical Record*, vol. vi, No. 2, p. 47) has reported three cases of tetanus treated successfully by the administration of 20 grains of ammonium bromid thrice daily. Two of the patients were kept in a dark room during the progress of the treatment. In one case the condition arose in the sequence of injuries received from the bursting of a gun; in another following an axe-wound; and in the third after a crushing wound by a falling building.

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CARE OF THE INSANE.

IN 1869, the Legislature of Pennsylvania created the Board of Public Charities, consisting of five members, and intrusted it with general visitorial powers. In 1883, there was additional legislation, and an act was passed "Relative to the supervision and control of hospitals or houses in which the insane are placed for treatment or detention," which provided for an addition of three members to the Board, which was further authorized to appoint from its own number a committee of five to act as the "Committee on Lunacy." As we understand the law, while large powers are conferred upon the Lunacy Committee it does not possess complete autonomy, and this may have been purposely withheld. The law of 1883 has now been in operation ten years, and through the medium of its annual reports its work is well known. Of this it may be said at once that what has been accomplished is, on the whole, most gratifying. Some of the results and tendencies of the operation of this law, and other legislation relative to the care of the insane enacted the same year, deserve notice at this time.

Aided by the provisions of the new law, and encouraged by a favorable public sentiment, efforts were begun soon after the organization of the Lunacy Committee to transfer the insane poor from the county almshouses to the State hospitals—in other words, to substitute State care for almshouse care of the insane. There was general acquiescence in the proposition to place the insane poor under State supervision. In September, 1892, excluding the counties of Philadelphia, Allegheny, Lancaster, and Lackawanna, which have organized institutions, there were only 250 insane persons remaining in sixty-four counties. It is creditable and remarkable that the change in the State policy has been made so expeditiously and with so little friction.

There does not seem to have been adequate preparation for the reception into the State hospitals of the large number transferred from the almshouses, in addition to the admission of new cases constantly developing throughout the State, and in the execution of the law one result was soon manifest, viz., the overcrowding of the hospitals beyond their intended capacity, and the refusal to admit fresh cases. The story of overcrowding comes from every one of these institutions, and it is easy to read between the lines of their annual reports that their operations as medical institutions are seriously impaired, if not paralyzed, from this cause alone.

In 1891, the Legislature, "at the suggestion of the Board of State Charities," authorized the Board to transfer, in its discretion, patients from the hospitals back again to the almshouses. The same year the Governor vetoed a bill to return the insane to the almshouses and appropriating money for their support therein. Among other things, GOVERNOR PATTISON said: "I am satisfied the bill is a step backward, and I am not willing to reverse the progressive and humane policy of this Commonwealth by its approval."

It is stated that eighty have been recently transferred from the Harrisburg Hospital to county almshouses in accordance with an order of the Board of State Charities. This movement deserves a notice from the medical press and suggests the question whether these transferred patients go to almshouses any better equipped for their care than formerly. Also, does it foreshadow a return to a system which has been condemned by the humane sentiment of the people and by the Executive of the Commonwealth? If it is the beginning of a reactionary movement, then the medical profession should protest, and urge and strengthen the State Board in its efforts for measures for a continuing elevation of the standard of care for the insane of all classes, rather than by silence seeming to assent to a retrograde

movement which may reverse the policy of State care. Public and professional sentiment will hardly approve of a system which permits dangerous overcrowding of the hospitals, to the embarrassment and detriment of all medical management, and permits the incurable, the chronic, and the helpless cases to drift into the almshouses.

It may be an opportune occasion also to question the wisdom of a system that crowds the insane of all classes—the recent cases, the incurables, and dements of every social condition—into the same wards. The State hospitals must make provision for all of these classes, but facilities for classification may be much improved. There must come in the future the hospital department proper, where the small percentage of the total hospital population who are probably curable may receive the best hospital treatment, and all that it implies, without stint. There will be needed outlying blocks and supplemental buildings for chronic cases. There will be needed also infirmary wards for dements, feeble persons, and paralytics. The whole scheme should be elastic and comprehensive, so as to include the requirements of every class.

Notwithstanding all that has been done, hospital plans are still unsettled, and, as is well known by those who note the tendency of medical thought, are in course of evolution. In this connection, we take this occasion to call the attention of our readers to a most suggestive paper on hospital plans by DR. ANDREW MACFARLANE, which appeared in the *Popular Science Monthly*, for October, 1893. We have also called attention to certain distinct reforms advocated by DR. STEPHEN SMITH, of New York.

THE PATHOLOGY OF LITHEMIA.

IN a lecture recently delivered,[1] PROF. DA COSTA gave a very lucid exposition of his views of the pathology of lithemia, and, taking these for a foundation, he indicated a line of treatment which certainly appears to be an eminently rational one.

The term "lithemia," as applied to a morbid state, involves much more than the presence in the blood of a mere excess of lithic or uric acid. Hence the proposition of the late PROF. AUSTIN FLINT to substitute for the older term the new one, "uricemia," or, even still worse, "uricacidemia," is to be condemned, as it implies that the efficient cause of the symptoms, as well as the leading indication for treatment, is to be found in the abnormal accumulation, or excessive production, of a single excrementitious element. Lithemia is a modified form of gout, and it is the form in which gout particularly manifests itself in this country. It is, in fact, "American gout."

Habitual indulgence to excess, especially in albuminoid food and alcoholic drinks, is manifestly the direct cause both of gout and lithemia. As every lithemic will testify, sugar is especially injurious; so also are all articles of food that are easily made to undergo the acid fermentation, as fermentative dyspepsia aggravates all the symptoms. Lithemia, then, is a morbid state in which the income of nutriment is in excess of the outgo of waste. The quantity of food is greater than either the needs of the system require or the organs of excretion can promptly dispose of. There is defective oxidation as well as deficient elimination. One consequence of the excessive ingestion of food is that the functions of the liver are imperfectly performed, and there is, generally, more or less hepatic disorder. The blood contains urates in excess, and frequently oxalates, also other imperfectly elaborated products of waste; possibly it may be yet further poisoned by ptomaïns resulting from imperfect gastric and intestinal digestion.

The urine of lithemia is, as a rule, dense, high-colored, and of higher specific gravity than normal urine; but spontaneous deposits of urates and uric acid are seldom observed. Small quantities of albumin may sometimes be found; even tube-casts, both hyaline and epithelial, may be discovered; but usually these are transitory and do not indicate permanent kidney disease.

Another point of difference between lithemia and gout is the clinical fact that in the former deposits of urates in the vicinity of joints are not observed, and attacks of acute arthritis of toes or fingers do not occur. There may be, however, a painless enlargement of the terminal finger-joints, especially in elderly people, with impairment of function. The cardiac hypertrophy and kidney-degeneration of true gout do not belong to the clinical history of lithemia. The blood-tension may be increased, but it is so to a less degree than in gout, and the arteries do not exhibit the atheromatous condition that characterizes the graver form of disorder.

As the organic lesions are slight, the prognosis

[1] Lecture delivered by invitation before the medical classes, in the Medical Hall of the University of Pennsylvania, March 6, 1894.

is correspondingly favorable, provided the symptoms are properly interpreted and a rational treatment is instituted.

The symptoms of lithemia have been so well described by the same skilled hand, in previous contributions to the literature of this very interesting form of disease, that they should be familiar to all. There is the impaired digestion, the muscular pains, the neuralgic attacks, and pains in the tendons (notably in the tendo Achillis), the indisposition to exertion, the lack of ambition, the irritability of temper, the depression of spirits, and the general gloom, the frequent and severe attacks of vertigo and of migraine, the restlessness, with jerking muscles, at night, and the drowsiness during the day—all of which combine to make the life of the poor lithemic far from a happy one.

The tendency to lithemia may be acquired in the manner already sufficiently indicated, or it may be inherited from gouty or over-fed ancestors.

The suggestion of DR. WM. ROBERTS regarding the formation, under such circumstances, of the less soluble biurates in place of the more soluble normal quadriurates, is a plausible and probably the true explanation of the phenomena of gout; but, like HAIG'S uric-acid theory, it is too restricted and does not sufficiently account for the phenomena of lithemia. A neuro-humoral hypothesis similar to that proposed for gout by SYDENHAM appears, on the whole, to be more in accord wth the facts, the lithemic condition being due to faulty metabolism as well as to poisoned blood.

Keeping in view the pathology of lithemia as outlined, we are prepared for the statement that the most important factor in the treatment is the regulation of the diet. The food need not be strictly vegetable, but the nearer it approaches this standard, the better for the patient. Green vegetables (except asparagus), fresh fruits, stale or toasted bread, with the white meat of poultry and fish, should constitute the main reliance. An excess of carbohydrates, especially sugars, should be avoided. The only drink allowed should be water, which should be taken in sufficient quantities to keep the kidneys active. Mineral waters may be ordered to accomplish the same purpose. Alcohol should be positively excluded, except that elderly patients, who have been all their lives accustomed to the use of stimulants, may have whiskey or a good, sound claret with their meals. Exercise in the open air is also an important part of the treatment. As regards the purely medical management of the lithemic state, too much physic is to be avoided. Saline laxatives are very useful. A combination of lithium carbonate (gr. ij.) with extract of nux vomica (gr. ¼) given after meals is of special value. In attacks of lithemic migraine, a few doses of a mineral acid, it is claimed, will often cause the symptoms to disappear. An important point of treatment is to watch the digestive organs and scrupulously avoid food that causes fermentation, with the consequent production of an excess of acid in the stomach.

THE STUDY OF IDIOCY AT ELWYN.

IT has long been recognized by a few specialists in this city that the opportunities for the scientific study of idiocy at the Pennsylvania Training-school for Feeble-minded Children, at Elwyn, were unparalleled in this country, and perhaps not excelled in the world. It has been equally recognized that these opportunities have not been utilized in the past as thoroughly and systematically as could have been wished. It is not necessary or pertinent to enter now into a discussion of any possible causes that may have conduced to this. The labor of organization in a comparatively new and rapidly-growing institution, and the ever-present duties of administration, seemed in this, as in so many of our American asylums, to rise up, like Jonah's gourd, and spread out and obscure all the other interests. The scientific work at best was sporadic, and while it was excellent in its way, it was confined rather too exclusively to desultory papers and to annual reports. The fact that the most notable scientific production of the institution in all its history was the work of an outsider suggested, to some minds at least, that the opportunity to do such work ought to be offered more liberally to scientists who were not directly connected with the school, and who could bring to its service from beyond its own walls the skill and attainment of trained experts in both pathology and clinical medicine. Whatever obstacles existed to such a plan seem in the course of time to have been eliminated, for at their recent meeting the Board of Directors, with a liberal and enlightened policy fully abreast of the spirit of the time, appointed a full staff of neurologists, physicians, surgeons, and specialists to take up the scientific work. It is thoroughly understood by both the Directors and the members of the new staff that the duties of the latter are in no sense to be merely perfunctory, but that these consultants are not only to

participate in but also to lead and direct the practice and the researches undertaken in the school.

We think that this ought to inaugurate a new era in the study of the pathology and treatment of idiocy in this city. That this great institution, lying almost within the suburbs of Philadelphia, and ministering to the wants of almost one thousand feeble-minded children, should have contributed from out its rich storehouse so little to the advancement of science and to the reputation of this great medical center is an anomaly that we trust will not continue longer to be seen. With less material and opportunity the reputation of some European schools has been made; from little if any greater field BOURNEVILLE has contributed his annual volumes to the elucidation of this most important specialty. The necessity for a too exclusive attention to the labor of organization no longer exists to the same degree as formerly, and can be met by the Board to whom it properly belongs, while the details of administration will be wisely distributed among officials who are not responsible for the scientific work.

The subject of idiocy still offers many problems of the first importance both to the pathologist and to the sociologist. The prevention and treatment of feeble-mindedness can never be thoroughly established until the pathologist masters the subject more thoroughly than at present. The relations of idiocy to heredity, to the various dyscrasiæ and toxemiæ, to the complications and accidents of childbirth, and to the infectious processes, are a few only of these problems. While to the humanitarian the care and education of the imbecile brain may seem to be the prime object, to the sociologist the regulation and control of those evil forces conducing to the production of this sad social blight will ever be paramount. These varied and far-reaching problems, social, humanitarian, and scientific, all come to a focus in such an institution as that at Elwyn. It is hoped and believed that the liberal policy now inaugurated by the Board of Directors will be justified by the fruits of a wise and thorough scheme of scientific work.

EXTIRPATION OF THE LARYNX.

EXCISION of the larynx is not being practised as frequently as it was a few years ago. One or more operators of large experience have expressed themselves in its disfavor, arguing that the disappointments in regard to the safety from recurrences of malignant disease in the tissues whence the extirpation has been made, and the short average of life thereafter, do not justify the risks taken in submitting to the excision.

On the other hand, a few exceptional cases have recently been reported in which the immediate and prospective success has been unusually favorable. In these cases attempts have been made to avoid the danger of escape of food, saliva, mucus, and débris into the air-passages, by the device of stitching the orifice of the severed trachea to the skin in such manner as to cut off all communication with the wounded tissues.

More than this has been accomplished; for by stitching the trachea in this way a large permanent orifice is obtained, so that a tracheotomy-tube or other canula is dispensed with; and thus a serious source of irritation is circumvented, *i. e.*, irritation due to the presence of a foreign body in the wound. The recoveries from operation have been more prompt than formerly, and the periods at which food could be taken in the ordinary manner much earlier. Indeed one case at least is on record in which food was satisfactorily swallowed immediately after the operation.

Furthermore, in some of these cases there has been no attempt to substitute an artificial larynx for the organic one, and yet attempts to speak with the structures as they have been left or have become modified during cicatrization have culminated in the production of voice far superior to that produced by an artificial appliance.

May it not be that the withholding of foreign bodies from the wound will render excision of the larynx more encouraging in the near future?

EDITORIAL COMMENTS.

The Retort Courteous.—In the *Journal of the American Medical Association* for March 10, 1894, occurs the following editorial utterance:

"CAPTIOUS CRITICS.—We are naturally pleased to see the great interest taken in the articles from time to time published in the *Journal*, but when the editors of other journals pervert friendly interest to carping criticism on what we do *not* publish, we have a clear right to invite their attention to a homely adage which reads, '*Mind your own business.*' It is with sincere regret that we apply the invitation to the editors of the PHILADELPHIA MEDICAL NEWS and the *Pittsburg Medical Review*, but their bad manners in attacking Dr. Woodbridge, a valued contributor, and a worthy member of the Association, for daring to divide his article in two parts; and attacking in savage strain the editor of this *Journal* for presuming to publish the same (also in two parts), seems to show a desire to find fault, as ridiculous as it is senseless."

Our contemporary is as courteous as it is truthful, and as truthful as it is courteous; and we should feel derelict did we fail to acknowledge in a befitting manner its courtesy and its truthfulness. In order to exhibit still more fully the heinousness of our offence and the offence of our always outspoken contemporary of Pittsburg, we must point out a fact or two that have escaped the memory of the *Journal*.

In its issue of February 10th was published a paper entitled "Can Typhoid Fever be Aborted?" read by J. E. Woodbridge, M.D., before the Mississippi Valley Medical Association, October, 1893. This paper claimed that a certain treatment of typhoid fever, original with the author, was infallibly curative, and frequently aborted the disease. We patiently read and re-read every word of the paper to find some intimation of the nature of the treatment, or some promise to publish the treatment later. We searched carefully through the editorial columns of the *Journal*, to find some allusion to this omission, some intimation that it would be rectified. Strange to say, we were unable to find either in the paper or in the editorial columns, what was not there, and our Pittsburg contemporary seems to have been equally unfortunate. Had we been possessed of "second sight," as was clearly our duty, we would have known that the "second part" of a paper apparently finished and read at Indianapolis, Ind., in Oct., 1893, and published on Feb. 10, 1894, was to be read in Mahoning Co., Ohio, on Feb. 12, 1894. We cannot refrain from expressing our admiration of the editorial brilliancy which places as a heading over this "second part" (which, however, the author terms "second paper"), read at a different place and time from the "first part," the words: "Continued from page 187, February 10, 1894." This is a new departure in journalism, as bold as it is unlikely to be imitated.

We are sincerely glad that Dr. Woodbridge, by this second paper, and the *Journal* by its publication, have in so far redeemed their characters. We forbear to comment upon the second paper, believing its peculiarities to be due more to error of judgment than to wrong intent. We are rejoiced to find the *Journal* becoming sensitive to criticism, as this is an indication that it may finally learn that the Association owns the *Journal* and that the *Journal* does not own the Association.

We trust, moreover, that the lesson of the whole "*ridiculus mus*" will not be lost on editors and authors in general. Notwithstanding the apparently condoned aberrations of many men, the profession, as represented by the American Medical Association, is devoted to the principles of right conduct embodied in the Code of Ethics, and no one can long transgress them without being called to account. Even those who succeed in obtaining position and influence while violating the Code, have, after all, but the wirepuller's success; they have neither the esteem, the respect, nor the confidence of those whose good opinion is to be desired.

A Study of Dietaries.—As the mode of life, and particularly the food-supply, of a community has a most important bearing upon general and individual health and length of life, the results of some observations detailed in a study of dietaries recently made under the auspices of the College Settlements Association are of more than ordinary interest. The observations were made partly in Philadelphia and partly in Chicago, and include some fifty individual dietaries. Among other things, the theory that man's natural appetite, when not controlled by extraneous circumstances, leads him to take the food that supplies all the nutritive elements that he needs, and in about the right proportions, was corroborated. In twenty-three dietaries it was found that an average of 21 per cent., by weight, of all the food consumed was bakers' bread, which is usually raised excessively, dries quickly, and lacks nutritive power, so that the diet of a majority of persons in any large city would be improved by providing bakeries where good whole-wheat and white bread could be bought at reasonable prices. To the same end, a taste for good home-made bread should be cultivated to as large an extent as possible. The cost of living is increased among the poor by the necessity of having to purchase the raw materials in small quantities. Besides, however, some of the excess of cost is due to lack of intelligence in purchasing and want of knowledge as to the nutritive values of different articles of food. It is pointed out that by a more general use of peas, beans, cornmeal, and the cheaper cuts of meat, dietaries can be cheapened as to cost, and at the same time increased in nutritive value. It is admitted that to work with individuals to bring about improvements in these respects would be an arduous and lengthy task, and it is believed that the most effective and rapid way to accomplish the desired result of rendering attractive and palatable inexpensive yet nutritious fare for working people, indeed, for all persons, is through kitchens and restaurants, as the New England Kitchen in Boston and the Hull House in Chicago, where such dishes as the best scientific and practical knowledge of the day can produce are served, or sold to be taken home. In connection with such kitchens there might also be lectures on cooking and centers for the sale of raw materials of food of the best quality.

We have before alluded to the noble work done by the College Settlements Association, and the encouragement and aid physicians may give this body in its labor for the hygienic and social progress of the crowded poor of great cities. The Secretary, Mrs. Florence Y. Humphries, 2348 North Twenty-first Street, Philadephia, will answer inquiries and supply literature on request.

Infection through Cigars.—Attention has been directed from various quarters to the possibility of transmitting disease through cigars, which receive a good deal of manipulation in the process of manufacture. It is not uncommon for the unfinished product to be taken into the mouth and a small portion bitten off, while the saliva is often used, applied either directly by the tongue or lips or by a finger. In illustration of this risk we need but refer to a report of two cases of labial chancre in cigar-makers contained in THE NEWS of July 15, 1893, p. 68. It can readily be understood that tuberculosis might likewise be transmitted in the same way. Investigations undertaken by a Roman physician tend to show that this channel of transmitting tuberculosis is restricted by certain limitations. Thus, cigars made in the usual manner, but moistened with saliva known to contain tubercle-bacilli, were by inoculation-experiments found to have lost their infectiveness ten days after

having been dried and packed in the ordinary way. While the risk of infection thus appears to be minimized, it is none the less a real one, and measures restraining the use of the saliva should be rigidly enforced. Further, in the selection of cigar-makers we should consider justifiable a preference for those free from all infectious disease.

Two Portals of Entry for the Tubercle-bacillus.—There are not a few cases of tuberculosis in which the source and route of infection elude detection. BOULLAND (*Limousan Méd.*, No. 9, p. 129; *Revue de la Tuberculose*, 1893, No. 4, p. 367) calls attention to two possible channels of communication which have hitherto received little or no consideration. The exposed cavity left in the gum after a tooth has fallen out spontaneously or has been removed surgically presents an absorbing surface capable of affording lodgment for tubercle-bacilli that may be present in insufficiently cooked tuberculous meat or other food. Under these circumstances tuberculous involvement of the glands of the neck may be the first indication of infection. The second mode of infection is by the entrance into the ear of the child during labor of blood of the mother containing tubercle-bacilli, with the development subsequently of a tuberculous suppurative otitis, which may in turn lead to general infection. It thus becomes a wise precaution to irrigate with an antiseptic solution the ears of children born of tuberculous mothers.

The Laws of Alabama, as we are informed, protect a physician of that State in his practice and in publishing the following advertisement:

WANTED.—Healthy left male arm from shoulder down; subject must be white and between twenty-five and thirty-five years old; arm to be amputated two inches below shoulder-joint and grafted on another man's body. Will pay handsome price. Apply to the surgeon, Dr. ——, —— Street, Birmingham, Ala.

The methods of treatment of this individual are thus described:

He cuts two deep incisions in the back for headache, taking a poor man's horse in part of a fee of $200 therefor. He punctures the cornea of an eye that is wholly lost, gouges about in the globe, saying "the sight would be entirely restored by thus stimulating the optic nerve"—for which his charge is $25 in advance. His office is crowded at all times.

Untrustworthy Reports of Medical Facts are the most common things in the daily papers, but when echoed in medical journals severe editorial responsibility should come into play. An instance has lately occurred. Some joking newspaper reporter, finding his "reports" of facts all too small, took it into his head to record the birth of quintuplets at Kittanning, Pa. Our only wonder is that he didn't credit Mrs. Rosenberger with six or eight instead of five children as the result of a single labor. But the quintuplets aroused our suspicion, and we wrote to a reputable physician of Kittanning as regards the truthfulness of the report. He replied that he knew the Rosenberger family well, and that the whole story was absolutely without foundation. The lady had never even borne twins, and no child within the past year. Despite this, medical journals are solemnly repeating the story, and obstetric statistics will be falsified by it to the end of time.

REVIEWS.

THE NATIONAL DISPENSATORY. Containing the Natural History, Chemisty, Pharmacy, Actions and Uses of Medicines, including those recognized in the Pharmacopeias of the United States, Great Britain and Germany, with numerous references to the French Codex. By ALFRED STILLÉ, M.D., LL.D., Professor Emeritus of the Theory and Practice of Medicine and of Clinical Medicine in the University of Pennsylvania; JOHN M. MAISCH, Ph.M., Phar.D., Late Professor of Materia Medica and Botany in the Philadelphia College of Pharmacy, Secretary to the American Pharmaceutical Association; CHARLES CASPARI, JR., Ph.G., Professor of Pharmacy in the Maryland College of Pharmacy, Baltimore; and HENRY C. C. MAISCH, Ph.G., Ph.D. New (fifth) edition, thoroughly revised, according to the new United States Pharmacopeia (7th Decennial Revision, 1894). 8vo, pp. 1910, with 320 illustrations. Ready Reference Thumb-letter Index. Philadelphia: Lea Bros. & Co., 1894.

THE publishers of this great work may justly pride themselves upon its issuance five months after the publication of the new Pharmacopeia, and but one month after the date assigned for the latter to go into effect. The sweeping changes of the new official standard have been thoroughly incorporated, additions have been made from the latest editions of foreign pharmacopeias, and ample space—in our judgment a little too much space—has been devoted to the new synthetic drugs and unofficial preparations. Many new tables have been introduced from the new Pharmacopeia and elsewhere. Weights and measures are given in both the ordinary and the metric systems, and for the convenience of pharmacists the official formulas have been given in reduced and convenient quantities, according to the customary apothecary's weights and measures. The editors state that in no previous edition have the alterations and additions been so great; that the pharmacists will find a full discussion of chemic and pharmaceutic processes, with descriptions and explanations of the most approved apparatus and tests; that the pharmacopeial formulas for galenic preparations have been freely commented on, and improvements suggested wherever such have seemed desirable. Dr. Stillé has contributed in the preface an appreciative note upon the character of his lamented colleague, Prof. John M. Maisch. The publishers state that prior to the death of Dr. Maisch, the latter had practically completed the portion of the work he had reserved for himself, while the remainder was intrusted by him to Prof. Charles Caspari, Jr., whose name, together with that of Dr. Henry C. C. Maisch, now appears upon the title-page.

The therapeutic portion of the work, that in which our readers will take the greatest interest, remains, as before, under the care of Prof. Stillé, and has been revised with his accustomed thoroughness. Dr. Stillé emphasizes, in his preface, the value of the empiric as contrasted with the dogmatic method of therapeutics,

contending that the practical physician must depend finally upon experience alone. In the Index of Therapeutics, under the name of each disease is a list of all the medicines employed in its treatment, and in the articles relating to each medicine are set forth the conditions calling for the employment of the remedy in question. There can be no doubt that, properly employed, the great mass of empiric knowledge to which attention is thus directed must prove of great service in the management of cases of disease, yet it is obvious that a high degree of critical judgment must be brought to bear in estimating the value of the recommendations of the various observers quoted, and that one may sometimes be confused by the very richness of the material placed before him. For instance, under Leukorrhea we find a list of 113 remedies; for Gravel, 57 drugs are tabulated, and so throughout the list.

It must not be forgotten that on turning to the page upon which the individual remedy is discussed, we find judicial and sometimes caustic criticism of its claims, and thus one can be sure that a statement which receives Dr. Stillé's indorsement is one which he has either practically put to the test, or which commends itself to his judgment by its source and by its accordance with reason and sound principles of medicine.

To point out in detail the merits of this stupendous achievement of science and industry would be an endless task; to state the few deficiencies we have noted is a brief matter. D. D. Stewart's investigations have conclusively proved that the proprietary substance called hydro-naphthol did not deserve any recognition apart from the virtue of the beta-naphthol it might contain, and that the so-called discriminating tests were fallacious. We are therefore sorry to see hydro-naphthol given separate mention and reference to Stewart's work omitted. We cannot agree with the author's somewhat slighting estimate of the value of creosote and of iodoform in the treatment of pulmonary tuberculosis. We have been unable to find reference to one of the best salts of quinin, the double hydrochlorate of quinin and urea, the usefulness of which by hypodermatic injection has been conclusively proved.

Quinin chlor-hydro-sulphate is also omitted. Sodium succinate, which is not mentioned, is a useful remedy in the treatment of biliary lithiasis. While there is a good article on calcium chlorid, one of its most important uses—as a hemostatic and a remedy in hemophilia—is omitted. We must call especial attention to the very just estimate that Dr. Stillé places upon antipyrin and its poisonous congeners, and his implied condemnation of the entire practice of antipyretic medication. It is true that the profession is recovering its sanity on this subject, but Dr. Stillé's weighty words cannot fail to confirm that wholesome tendency.

In conclusion, we must again express our admiration of the manner in which authors and publishers have done their respective shares of the work, and congratulate American science upon having produced a pharmacologic commentary at once so modern in its comprehensiveness and its thoroughness, and so loyal to long-established professional and scientific principles in its inspiration. There is no other guide so safe or so sure.

PYOGENIC INFECTIVE DISEASES OF THE BRAIN AND SPINAL CORD: MENINGITIS, ABSCESS OF BRAIN, INFECTIVE SINUS-THROMBOSIS. By WILLIAM MACEWEN, M.D., Glasgow. 8vo, pp. 354. New York: MacMillan & Co., 1893.

ATLAS OF HEAD-SECTIONS. Fifty-three Engraved Copper-plates of Frozen Sections of the Head, and Fifty-three Key-plates, with Descriptive Texts. By WILLIAM MACEWEN, M.D. 4to. New York: MacMillan & Co., 1893.

ALTHOUGH issued concurrently, these two books have not the relation of text and atlas. Each is complete in itself.

The one first named is a surgical monograph of a very high order. Its keynote is to be found in the preface, where the author states that within the last ten years he has had experience leading him to believe that abscess of the brain and other pyogenic intra-cranial affections are of more frequent occurrence than has been usually supposed, and to take a less somber view than he formerly did of the chances from operative interference in cases of this kind.

The first chapter contains a clear and philosophic exposition of the surgical anatomy of the brain and its coverings, at various periods of life. Especial stress is laid upon the intra-cranial circulation, and upon the arrangement of the veins so as to secure an even, regular, constant flow of the blood, without fluctuation, and free from suction-interference on the part of the large extra-cranial veins. A point of some importance is the description of what the author proposes to call the "supra-meatal triangle of the temporal bone"—a space, usually depressed, just above the meatus externus, and below the posterior root of the zygoma; here access is best gained to the mastoid antrum.

In the second chapter, on pathology, an account is given of the various intra-cranial lesions which may result from pathogenic and saprophytic causes, and of the manner in which microörganisms reach the interior structures. Here, as might be expected, much is said regarding suppurative inflammations, acute and chronic, of the middle ear. The mode of formation of abscess in different portions of the brain is described. Lepto-meningitis, in its various forms, and encephalitis, are discussed. A brief section is added upon tuberculosis and carcinoma as met with in the middle ear.

The third chapter deals with the symptoms of cerebral abscess, and the fourth with thrombosis of the intra-cranial sinuses, in its two recognized forms—marasmic and infective. In these and the preceding chapter, the views advanced are illustrated and enforced by clinical histories, more or less full in detail.

The fifth chapter is devoted to the subject of treatment. Prophylactic measures must be enforced, chiefly in the way of thorough antisepsis and asepsis. In a very large class of cases, for the most part of a kind which at first, at least, are entrusted to specialists in aural surgery, the failure of ordinary means should lead to a resort to operative interference. As to this, the author gives very full and clear directions. For opening the mastoid antrum, he prefers the rotary burr, driven by a surgical engine, to any other instrument. He justly objects to the use of the chisel and mallet for this purpose,

on account of the risk of damage to the contained parts, either from the unavoidable concussion, or from direct wounding, as well as because of the comparative roughness of the opening thus made.

In the sixth chapter we find a statement of the practical results obtained by the author from the carrying out of his views as set forth. These results are very modestly presented, and bear the impress of candor; they certainly afford a very strong warrant for the acceptance of his teachings.

We regret much that the limitations of our space forbid an extended analysis of the material contained in this very important work, but oblige us to be content with the foregoing brief *résumé* of its scope. The history of the recent development of brain-surgery is, indeed, instructive. Perhaps in no other field have greater or truer triumphs been achieved as the result of scientific research, demonstrating the causal relations of morbid processes, rendering operative interference at once rational, effective, and safe, and banishing the so-called conservatism, under which the surgeon sat "letting 'I dare not' wait upon 'I would'" while his patient drifted along to death.

We cannot conclude without referring to the beauty of the illustrations, sixty in number, all but three of which have been prepared expressly for the work before us. They are not only fine artistically, but singularly faithful and suggestive as representations of anatomic or diseased conditions. The typography and mechanical execution of the book leave nothing to be desired.

The other work now under notice is equally deserving of praise. It consists of fifty-three admirably-executed copper-plates, representing sections of the head. Of these, twenty-four are coronal, eleven sagittal, and eighteen horizontal. Each one has opposite to it a key-plate (woodcut) in outline, with a few lines of explanatory text. The coronal sections are in three series, the first consisting of thirteen from a subject sixty years old, the second of seven from a man of forty, and the third of four from a child aged two and a half years.

The eleven sagittal sections are all from the same subject, a man thirty years of age.

Three subjects, males, aged respectively thirty-five, fifty, and five, have supplied material for the horizontal sections: eight being taken from the first, two from the second, and eight from the third.

These plates are very interesting, and by means of them the relation of the various parts of the brain to one another and to the exterior of the skull is clearly shown. They will greatly aid the earnest student of cranial topography, and enable him to profit far more by his practical work in dissection and at the bedside.

Much credit is due the publishers for their enlightened enterprise in giving to the profession these admirable specimens of the book-maker's art.

LECTURES ON THE SURGICAL DISORDERS OF THE URINARY ORGANS. By REGINALD HARRISON, F.R.C.S., etc. Fourth edition, rewritten. 8vo, pp. 588. London; J. & A. Churchill, 1893.

THIS new edition of Mr. Harrison's well-known work will be cordially welcomed by a large class of readers. Although not a treatise, it contains a vast amount of information, the outcome of a wide and carefully digested experience. The material has been largely recast, with additions embodying the recent advances in genito-urinary surgery. These, indeed, are neither numerous nor important; among them we may note the operation of suture in cases of rupture of the urethra, the suprapubic opening of the bladder, the use of the cystoscope, and the employment of cocain as a local anesthetic in the urethra.

However desirable it may be, theoretically, to secure accurate apposition of the divided ends of a urethra, our own experience has been that the results of free perineal incision and the tying-in of a soft catheter are thoroughly satisfactory to both patient and surgeon. And we should judge that, except in most dextrous hands, the application of sutures would be not only difficult, but likely either to fail altogether or to give rise to stricture of an intractable form.

We are glad to find the suprapubic route to the cavity of the bladder—the simplest, safest in most cases, and in many the most practically useful—favored by so high an authority.

Mr. Harrison's expectations from the cystoscope, we must confess, are more sanguine than our own. We can remember when the instruments of Cruise and Desormeaux excited much enthusiasm among our fellow-surgeons; and while the electric lamp obviates one of the difficulties in their use which led to their abandonment, we have grave doubts as to the value claimed for the newer appliances. That they may, in a limited range of cases and under skilled manipulation, give some information to practised eyes, is very probable. But that the cystoscope will ever become, like the stethoscope, an article of daily use, to be found in the hands of the rank and file of the profession, we can hardly imagine.

In speaking of sounding, Mr. Harrison says that the sensitiveness of the urethra may be lessened "by a preliminary injection of a 10 per cent. solution of cocain." We think it would have been well to state the amount. One dram of a 20 per cent. solution, used in this way, has proved fatal in twenty minutes in a case reported a few years ago; and it is well known that the susceptibility varies in different subjects, so that in some a smaller quantity might be dangerous.

Apart from its great general merit, there is one feature of this book which should commend it to the profession in this country—the author extends thorough recognition to the work of American surgeons.

CORRESPONDENCE.

A CASE OF SCROTAL ERYSIPELAS.

To the Editor of THE MEDICAL NEWS,

SIR: I was called to see Mr. N., thirty-seven years of age, on February 16, 1894. I found him suffering severe pain in the perineum. The temperature was normal; the pulse somewhat exaggerated; the tongue not coated. The man explained that he had recently been afflicted with a number of boils, especially one on the perineum, which had apparently healed. He had also ridden on a horse without a saddle, which had injured the boil.

Upon examination I found the perineum and the most dependent part of the scrotum red, swollen, and congested. I ordered flaxseed poultices to be applied to the part during the night and prescribed morphin sulph., gr. ss, to be given at intervals to relieve pain. Next morning at 8 A.M. I found the patient had passed a restless night. The scrotum was more swollen; there was still no abnormality of temperature and no constitutional symptoms, and the appetite was fairly good. The treatment was continued. On the evening of the same day, at 5 P.M., I found the man's temperature 101°, the pulse 90, the tongue slightly coated. I then added quinin sulphate and tr. ferri chloridi to the treatment. On the morning of the third day I found the scrotum very much swollen and painful, *not pitting* on pressure and not itchy. The swelling had extended to the penis, the femoral region, and the inner side of the thighs. The temperature was 104°, the pulse 120, the tongue more coated and dry. I ordered a purgative of magnesium citrate, and directed starch poultices to be applied. On the evening of the third day, at 6 P.M., I found the patient's bowels had moved. I now noticed a small abrasion of the skin near the median line of the scrotum which was discharging a thin watery fluid. On the morning of the fourth day, twelve hours after the last visit, I found the whole of the scrotum black and discharging freely, and a considerable amount of sloughing of the penis. The patient was now lapsing into a comatose condition, and death ended his sufferings at 1 P.M. the following day, February 20th.

Gross's *System of Surgery* speaks of scrotal erysipelas or the inflammatory edema of Robert Liston.

Respectfully yours,

R. WARREN RAMSAY, M.D.,

DELTA, PA.

GALVANO-PUNCTURE FOR HYPERTROPHIED TONSILS.

To the Editor of THE MEDICAL NEWS,

SIR: In the issue of THE MEDICAL NEWS of February 17, 1894, Dr. Ward in his article on "New Ideas, etc.," does serious injustice to the results of galvano-puncture in the reduction of hypertrophied tonsils.

He states that "under the most favorable auspices galvano-puncture will require not less than a dozen sittings to produce any decided result." He also says that "it is unnecessary to state that the pain produced by this method of operation offers quite a serious obstacle to its employment."

Both these statements are entirely incorrect. The operation can be made entirely painless by brushing the tonsils with a 20 per cent. cocain solution and by instilling a drop or two of a 4 per cent. cocain solution into each lacuna, the patient being cautioned not to swallow any of the drug.

It need never require more than two sittings (and generally but one) to shrink the largest tonsils to normal size by the following method: The cautery-point is inserted as deeply as it will go into each lacuna, brought to white heat, and withdrawn in a couple of seconds.

After the cauterization of each lacuna, a flat cautery electrode (or the needle electrode curved so as to adapt itself to the tonsil) is passed over the surface of the tonsil and several furrows drawn. There is little or no after-pain. The slough is cast off gradually during the following fortnight, and the tonsil reaches its maximum of shrinkage in about four weeks. A repetition of the painless, bloodless procedure, easily practised on both children and adults, is rarely necessary.

EDWIN J. KUH, M.D.

CHICAGO, ILL.

A PRACTICAL METHOD OF REGISTRATION OF TUBERCULOSIS.

To the Editor of THE MEDICAL NEWS,

SIR: Believing that many physicians are thoroughly in earnest in their efforts to prevent the spread of tuberculosis and to reduce the present high mortality from this disease, I offer the suggestion that some medical society, the County Medical or the Pathological, for instance, establish a private registry wherein may be recorded all such cases of tuberculosis as willing and volunteer members may chance to discover in their private or public practice, so that such particulars as shall relate to the causation, as inheritance, occupation, exposure to infection, hygiene of the individual and of the locality, color, race and nativity, etc., shall be definitely stated, so that a scientific and accurate investigation extending over some period of time might be had. The value of such a registry would appeal to all intelligent physicians, and their active coöperation could probably be obtained. This would in nowise interfere with the liberty of the patient, and must surely prove of incalculable value to the student. The expenses of the undertaking would be nominal.

Very respectfully,

M. V. BALL, M.D.

PHILADELPHIA.

NEWS ITEMS.

American Medical Association.—The Section on Surgery and Anatomy will devote a portion of time to the systematic consideration of a few selected subjects, upon which papers, each not occupying more than ten minutes, will be read. It is hoped that speakers discussing these papers will confine their remarks to brief addresses of five minutes' length. The following papers are announced:

"The Pathology of Malignant Growths," by Dr. E. Laplace, of Philadelphia; "A Critique of the Sporozoan Theory of Malignant Neoplasms from a Micro-technical Standpoint," by Dr. A. P. Ohlmacher, of Chicago; "Clinical Recognition of Malignancy in Tumors," by Dr. C. A. Wheaton, of St. Paul, and Dr. Henry W. Coe, of Portland; "The Necessity of Early Surgical Interference in Malignant Tumors," by Dr. R. A. McLean, of San Francisco; "The Value of Caustics in Malignant Growths," by Dr. John Parmenter, of Buffalo; "The Radical Cure of Malignant Tumors by Operation," by Dr. J. H. Wythe, of Oakland, Cal.; "The Value of Inoculations with Septic or Toxic Agents in the Treatment of Malignant Neoplasms," by Dr. John A. Wyeth, of New York; "Early Symptoms and Diagnosis of Tuberculous Joint-disease," by Dr. Emmet Rixford, of San Francisco, and Dr. A. B. Judson, of New York; "Conservative Treatment of Tuberculous Joints," by Dr. R.

H. Sayre, of New York, Dr. Harry M. Sherman, of San Francisco, and Dr. James E. Thompson, of Galveston; "Operative Treatment of Tuberculous Joints," by Dr. Robert W. Lovett, of Boston; "Treatment of Tuberculous Joints by Injections of Iodoform," by Dr. N. Senn, of Chicago; "Treatment of Tuberculous Joints by Injections of Corrosive Sublimate," by Dr. R. H. Plummer, of San Francisco; "The Causation and Prevention of Hernia," by Dr. James T. Jelks, of Hot Springs, Ark., and Dr. C. M. Richter, of San Francisco; "The Management of Reducible Hernia," by Dr. Emory Lanphear, of Kansas City, Mo., and Dr. C. M. Fenn, of San Diego, Cal.; "The Treatment of Irreducible Hernia," by Dr. James B. Eagleson, of Seattle, Wash.; "The Treatment of Strangulated Hernia," by Dr. Joseph Ransohoff, of Cincinnati; "The Radical Cure of Hernia," by Dr. W. E. S. Davis, of Birmingham, Ala., and Dr. H. O. Marcy, of Boston; "The Pathology and Symptomatology of Hemorrhoids, Anal Fistule, and Anal Fissure," by Dr. J. M. Matthews, of Louisville, and Dr. David Powell, of Marysville, Cal.; "Treatment of Hemorrhoids," by Dr. H. M. Bishop, of Los Angeles, Cal., and Dr. Charles B. Kelsey, of New York; "Treatment of Anal Fistule," by Dr. J. McF. Gaston, of Atlanta, and Dr. G. B. Somers, of San Francisco; "Treatment of Anal Fissure," by Dr. Thomas W. Huntington, of Sacramento, and Dr. Lewis H. Adler, Jr., of Philadelphia; "Treatment of Fractures of the Lower End of the Humerus," by Dr. Oscar H. Allis, of Philadelphia; "Treatment of Fractures of the Lower End of the Radius," by Dr. P. T. Conner, of Cincinnati, and Dr. C. L. Bower, of Philadelphia; "Treatment of Fractures of the Neck of the Femur," by Dr. Bedford Brown, of Alexandria, Va.; "Treatment of Gunshot Fractures," by Dr. George A. Goodfellow, of Tucson, Arizona; "Treatment of Fractures of the Shaft of the Femur," by Dr. Llewellyn Eliot, of Washington, D. C.; "Treatment of Open or Compound Fractures," by Dr. H. H. Mudd, of St. Louis, and Dr. John B. Hamilton, of Chicago; "Effects of Obstruction in Urination upon the Bladder and Kidneys," by Dr. J. William White, of Philadelphia; "Diagnosis and Treatment of Enlargement of the Prostate Gland," by Dr. Hunter McGuire, of Richmond, and Dr. William T. Belfield, of Chicago; "Symptoms and Treatment of Stone in the Bladder," by Dr. William T. Briggs, of Nashville; "Symptoms and Treatment of Tumors of the Bladder," by Dr. John B. Deaver, of Philadelphia, and Dr. C. F. Buckley, of San Francisco; "Treatment of Stricture of the Urethra," by Dr. J. Rosenstirn, of San Francisco.

Longevity.—Dr. Archer Atkinson, of Baltimore, has succeeded in collecting from various reliable sources the names of some 250 persons who were known to have lived to the age of 100 years or more.

The American Surgical Association will hold its annual meeting in the lecture-room of the Medical Department of the Columbia College, Washington, D. C., on May 29, 30, 31, and June 1, 1894.

Dr. John Ashhurst, Jr., will read a paper entitled "The Surgical Treatment of Empyema," the discussion of which will be participated in by Drs. N. P. Dandridge, C. B. Nancrede, T. F. Prewitt, and De F. Willard.

Dr. J. S. Billings will present a communication upon "Methods of Teaching Surgery," which will be discussed by Drs. J. C. Warren, N. Senn, W. W. Keen, E. M. Moore, W. T. Briggs, and Hunter McGuire.

Dr. L. M. Tiffany will read a paper upon "The Surgery of the Kidney," in the discussion of which Drs. M. H. Richardson, H. H. Mudd, C. H. Mastin, and Ford Thompson will take part. Summary: 1. Influence of disease of kidney on general surgery. 2. Nephritis. 3. Pyelonephritis. 4. Nephrolithiasis. 5. Nephrectomy, partial and complete.

Dr. W. W. Keen will read a paper entitled "Methods of Controlling Hemorrhage in Amputation at the Shoulder," as illustrated by three cases of amputation at the shoulder-joint and of the entire upper extremity, which will be discussed by Drs. Roswell Park, C. B. Porter, and J. William White.

Papers will also be read by Dr. Hunter McGuire and Dr. Joseph Ransohoff.

The Association of Military Surgeons of the United States will hold its fourth annual meeting in Washington, D. C., May 1, 2, and 3, 1894.

This national organization is composed of medical officers of the U. S. Army, U. S. Navy, National Guard of the United States, and the Marine Hospital-Service, and includes in its membership many distinguished surgeons. A brilliant and able literary program is promised. The afternoon of one day will be set apart for an object lesson from the *Manual of Drill*, by the Hospital Corps. The evenings will be given up to social entertainments. About five hundred delegates are expected to be in attendance.

Dr. Nicholas Senn, of Chicago, is President of the Association, and Dr. George Henderson, of Washington, Chairman of the Committee of Arrangements.

The Colorado State Medical Society will hold its annual meeting at Denver, June 19, 20, and 21, 1894. A cordial invitation is extended to members of the American Medical Association to attend the meeting, and those who expect to return East *via* Denver are invited to correspond with the Secretary, Dr. A. Stewart Lobingier, in order that an invitation to participate in the program may be extended and proper entertainment may be arranged.

Mikulicz, of Breslau, is under consideration as the successor of Billroth at Vienna.

BOOKS AND PAMPHLETS RECEIVED.

Seventh Annual Report of the Ophthalmological Department of the State Hospital for the Insane at Norristown, Pa. Ophthalmologist, Charles A. Oliver, M.D. Reprinted from the Thirteenth Annual Report, 1892.

Syllabus of Lectures on the Practice of Surgery. Arranged in Conformity with the American Text-book of Surgery. By N. Senn, M.D., Ph.D., LL.D. Philadelphia: W. B. Saunders, 1894.

Two Cases of Laryngeal Neoplasms. By Robert Levy, M.D. Reprinted from the Journal of the American Medical Association, 1893.

Hysterectomy by a New Method. By E. H. Pratt, M.D. Reprinted from the Journal of Orificial Surgery, 1893.

A Possible Case of Anesthetic Leprosy. By James McF. Winfield, M.D. Reprinted from the Brooklyn Medical Journal, 1893.